

**DEPARTMENT OF NATURAL RESOURCES**  
**SUMMARY OF PUBLIC COMMENTS AND DEPARTMENT RESPONSES**  
**ON THE**  
**ENVIRONMENTAL ASSESSMENT**  
**FOR THE PROPOSED NEW OPERATING ORDER**  
**ON THE REST LAKE DAM**

**INTRODUCTION**

The Environmental Assessment (EA) on the proposed issuance of a new operating order for the Rest Lake Dam was released for public review on September 14, 2012. Copies of the news release were provided to the local media for publication and to interested parties that had signed up to receive information about the Rest Lake Dam via GovDelivery (a digital subscription service). The EA and news release was also provided to all individuals who requested either a hard copy or an electronic copy. Hard copies of the same were provided to the Manitowish Waters library and the North Lakeland Discovery Center. The EA and news release were made available for public viewing on the Department's external website for public review as well.

The formal public comment period for the EA was originally set to end on October 31, 2012 but was extended until December 31, 2012 after multiple parties requested more time to review the EA. Approximately 167 individual parties provided comments on the EA (either by phone, in-person, or in writing via e-mail or hard copy letter). The Department received 16 contacts from individuals requesting a hard copy of the EA. Of the 167 individual parties, many sent comments directly to the DNR Secretary and/or the Governor's offices. Copies of these comments were provided to regional Department staff, and they were accepted as comments on the EA. Many individuals provided comments to the Manitowish Chain Defense Fund (MCDF) but not the DNR. Information from these comments were summarized by the MCDF and were considered comments from one individual party.

This summary document constitutes, where noted, any and all formal amendments to the EA that was published for public review. No further documentation will be developed or sent out. Copies of this summary document have been sent to every party who provided comments on the EA as well as those other individuals who requested a copy.

## **RESPONSE TO GENERAL COMMENTS/ISSUES**

Before responding to specific comments, it is important to address some common themes attendant to many of the general comments received. These issues are identified in bold type below. Outlined under each issue is the Department's response.

### **General opinions expressing support or opposition of a preferred alternative and/or general environmental concern for the proposed project**

A number of comments were received that expressed general support/opposition or general concerns about the proposal to issue a new operating order for the Rest Lake Dam. We respect and appreciate these opinions. These comments, however, do not provide any substantive information relative to the clarity, accuracy, and scope of the Department's environmental analysis presented for public review. All of the general environmental issues identified in these comments have been addressed in the EA. While these comments have been made part of the official public record, this document does not include individual responses to these comments.

### **Manitowish Defense Fund Questionnaire**

Many comments were received in the form of a survey questionnaire that was created by the Manitowish Chain Defense Fund (MCDF). The survey was sent to every property owner on the Chain (1,226 parcels according to the MCDF) and approximately 300 of the survey forms were returned to MCDF which was a 24% response rate. The surveys that were submitted to the Department of Natural Resources (DNR) or the Governor's Office as well as the MCDF summary of survey responses were accepted as comments on the EA. The specific comments that were included in the survey forms are summarized and addressed in the next section of this document. While we appreciate that people took the time to send us information in this format, many of the comments were expressing general opposition to any changes to current operation and did not provide specific information relative to the clarity, accuracy, and scope of the environmental analysis. These general comments have been made part of the official public record and were addressed in the EA.

While not directly related to the environmental analysis process, it also should be noted here that current law limits the Department's ability to factor public opinion into every decision it makes. Many Department decisions, particularly on regulatory matters must, by law, be based entirely on a technical analysis of whether or not the proposed activity would meet the applicable standards established in the laws and administrative rules approved by the state legislature. In these decision-making circumstances, public opinion is not one of the factors the Department can consider. As part of the Executive Branch of state government, the Department cannot ignore or unilaterally change existing laws. We must operate within the constraints and standards of the law as provided to us by the Legislative Branch of state government.

### **Xcel Energy and the Chippewa and Flambeau Improvement Company**

It is important to note that Xcel Energy and CFIC are part of the same company and both names are often used interchangeably when referring to the current owner of the Rest Lake Dam. Additional information regarding the difference between CFIC and Xcel Energy is addressed in more detail on page 40 of this document.

### **Perception that DNR has made a decision on a specific proposal**

The language in the MCDF survey and in many individual comments made reference to a specific DNR plan or proposal. These statements are reflective of a misunderstanding of the WEPA process. The intent of the Department's environmental analysis process is to provide an information document that outlines the aspects of the

affected environment, how those resources are impacted by current operations, and identify a range of alternative operating orders. The Department needs to use the information gathered in the WEPA process (which includes the comments received regarding the clarity, accuracy, and scope of the analysis) to be able to make informed decisions on a potential new operating order.

### **Misunderstanding of EA process and requirements**

Some individuals who provided comments questioned why the Department did not provide more detailed analysis in the EA on social and economic concerns. Other commenters questioned the general level of detail in the EA as well. As noted above, some commenters expressed their “vote” in favor or opposition to the proposed project. Lastly, some of those commenting conveyed disappointment that the EA did not clearly identify the Department’s position on a preferred alternative.

The expression of these comments points to some misunderstanding of the purpose and intent of the environmental analysis process. The state’s environmental policy is spelled out in the Wisconsin Environmental Policy Act (WEPA) and requires the Department, as well as other state agencies, to consider the environmental effects of their actions to the extent possible under their statutory authorities. WEPA imposes procedural and analytical responsibilities, but it does not provide authority to protect the environment. The Department has substantial authority to regulate environmental pollution and alteration to waterways. However, the standards we can apply in exercising these authorities are defined in various regulatory statutes and administrative rules. For many Department regulatory programs, these standards do not include social or economic concerns. In turn, while the rules guiding development of environmental analysis documentation require general disclosure of social and economic concerns to the extent known or reasonably anticipated, the need for preparation of environmental analysis documents cannot be based solely on anticipated social or economic impacts.

## **RESPONSE TO SPECIFIC COMMENTS**

Following is a synthesis of all the specific comments received on the EA along with the Department’s responses. The responses take several forms including presentation of new information with associated revisions to the EA analysis (where noted) as well as explanations of the Department’s perspective. To aid the reader, comments and responses have been grouped under several main issues or topics as indicated below. Each paragraph under the comment section represents a separate, individual comment for that issue.

### **1. Project summary**

#### **a. Purpose and need for project**

##### **Comments**

Four to five years ago the argument to change dam operations was only about the sturgeon.

There is much confusion and speculation regarding the reason this change is being considered. I hear it was to restore sturgeon habitat. If that is the sole goal, I personally do not think it is worth all the property damage that will occur with the changed lake levels.

##### **Response**

To provide more detail regarding how the Department became involved in evaluation of the Rest Lake Dam, we hereby amend the EA to include the following narrative at the beginning of the first full paragraph on page 2: *“Department staff began to study the Manitowish River system after being approached by members of the public who were concerned that the management of water levels and flows negatively affected Lake Sturgeon populations downstream of the Rest Lake Dam. Initially, much of the early work and discussion*

*regarding water levels and flows was focused on this one species. When Department staff began work on the environmental analysis, a much broader range of environmental and public water rights issues affected by water levels and flows, both upstream and downstream of the dam, were identified and evaluated.”*

### **Comments**

This section of the EA fails to provide any information regarding the action.

One individual commenting on the EA expressed support of the following directive from page 2. “The current operation of the dam creates surface water levels and flows that are substantially different compared to the natural, annual pattern of levels and flows on northern Wisconsin lakes, rivers, and wetlands. This change in hydrology negatively affects the Manitowish River system upstream of the dam on the Chain of Lakes and downstream of the dam to the confluence with the Bear River. The Department of Natural Resources proposes to issue a new operating order to the owners of the Rest Lake Dam which specifies water levels and flows that balance and protect public water resource rights as well as life, health, and property both upstream and downstream of the dam.”

Perhaps the emphasis on sturgeon habitat and migration has been moved from the forefront, but the DNR’s continued preoccupation with species downstream has taken what we feel is undue preference.

The EA seems to give preference to interests below the dam.

### **Response**

Pages 1 and 2 of the EA clearly describe that the DNR is proposing to issue a new operating order to better balance and protect public water resource rights as well as life, health, and property both upstream and downstream of the Rest Lake Dam. The analysis was written to give equal balance in describing upstream and downstream environmental and public water rights issues.

### **Comment**

Overall the affected environment is an interesting review of aquatic and wetland ecology, and I learned a lot from reading the information. However the section is plagued by the lack of purpose in the Purpose and Need section. The reason an environmental document should start with the purpose is to help identify what affected environment is relevant. I cannot discern for example why the section on water quality (page 17) is included. Similarly the Floristic Quality Index is identified as an issue in the affected environment but never referred to again in the alternatives and impact analysis. Some of the material almost feels like misdirection. What do the sections on Mussels and Dragonflies lend to the discussion? The environmental assessment with attachments is unfocused, and contains more information than a person can reasonably interpret during this short comment period.

### **Response**

As stated in our responses above, the EA clearly describes the purpose and need for the DNR proposal to issue a new operating order. River, lake, and wetland systems are associated with a diversity of organisms and habitat types. Water quality, floristic quality, mussels, and dragonflies are all factors affected by current and alternative operations. The effects of current and alternative dam operation on water quality and aquatic plants are described in the Alternatives and Environmental Consequences section that begins on page 51 of the EA. When discussing impacts, instead of relisting every species and habitat type under each alternative, the analysis focuses on key species and habitat types to help the reader understand the impacts on the entire system.

### **Comment**

In the affected environment on page 13, the magnificent Manitowish Water Chain of Lakes is referred to as the Rest Lake Reservoir. My magnificent Island Lake is now just a bay in the Rest Lake Reservoir. That is so discouraging, and it really isn't that subtle. Are we being reprogrammed to accept our magnificent Chain of

Lakes as a drawdown reservoir - "in order to meet downstream needs?" It is stunning that the DNR can suggest that this change will not adversely affect property values.

### **Response**

On the first page of the environmental analysis we define that the term “reservoir” simply refers to the fact that the Rest Lake Dam impounds water on the Manitowish Chain of Lakes. The use of the term “Rest Lake Reservoir” in the analysis is not intended to imply any predetermined outcome or to diminish the value that people see in the Manitowish Chain of Lakes and river system.

### **Comments**

Remarkably absent is any information regarding the purpose and need for this project. It becomes apparent that DNR has determined to maintain the downstream hydrograph in a run of the river natural flow by assuring that all water withdrawn from the Chain, notably from cranberry operations, is lost from the Manitowish Chain pool, and does not affect down stream flow. Perhaps the Chain is being reallocated to some unknown degree from a recreation based program to a hydropower drawdown system. I can only guess, because the DNR fails to acknowledge the purpose of the action. It is incumbent upon the DNR to state the purpose in the Purpose and Need section rather than make the reader guess. At a minimum the DNR should extend the comment period to allow the public a reasonable time to read and consider what exactly is being proposed and for what purpose.

The EA fails to explain why changes are necessary. It fails to provide any information regarding the purpose and need for making changes to the operating order. If the DNR believes it would be in the public interest to modify the existing order, the DNR should explain why that is so rather than force the public to guess. Since the DNR has been studying modifications to the existing order for more than 10 years, it should be easy for the DNR to explain why changes are necessary.

On page 77, relating to Cumulative Effects, the DNR makes another ominous reference to hydropower. Is this the downstream value the DNR will occasionally prioritize? Is this the true purpose of all this?

### **Response**

The purpose and need for the proposal to issue a new operating order is described on page 2 in the section titled “Brief overview of the proposal including the DNR action”. In this section the analysis clearly states that current operations create patterns of water levels and flows in flow through lakes, rivers, and associated riparian wetlands that are very different from natural conditions and therefore, current operations of the Rest Lake Dam are having a number of negative impacts on public trust water resources both upstream and downstream of the dam. The area of the affected lakes, rivers, and wetlands is identified in Figure 1 & 2. Similar purpose and need information is described in the Proposed Physical Changes section on page 49. To add clarity to the analysis, we hereby amend the Environmental Analysis to include the following on page 8 after the United States Geological Survey (USGS) web links.

*“The natural pattern of water levels in flow-through lakes is associated with high water levels in April, May, and June. This natural pattern of water levels is much different when compared to the water elevations of the Chain of Lakes due to the current operation of the Rest Lake Dam. Low water level conditions on the Chain currently occur more than 6 months of the year from late fall through late May or early June. These conditions are caused by the 3.5 foot winter drawdown and refill that does not begin until after the water stored in the snowpack has passed downstream. With the extent of drawdown, in lower precipitation years the Chain does not reach the 8’6” level for most or all the summer season. These low water levels negatively affect public water interest through loss of recreation, dewatering wetlands critical to overwintering herps and mammals, and also exposing lakebed areas that are important for a wide variety of fish, wildlife, and other aquatic species. On rivers, a natural flow pattern includes a high spring flow “flood pulse” followed by flows that gradually decrease through summer with the lowest flow occurring in late summer and early fall. Currently, downstream of the dam, from spring through fall, the flows discharged by the dam create severe drought conditions on the river and associated riparian wetlands on a regularly recurring basis. On*

*an annual basis, these drought condition flows begin at the start of the growing season. These flows and associated low water conditions on the river below the dam negatively impact recreation, in-channel habitat needs, and riparian wetlands that are utilized by a wide variety of fish, wildlife, and other aquatic species. The Chain of Lakes and Manitowish River are primarily utilized for recreational use and a drawdown of the reservoir is not needed for hydropower production. In order to better balance and protect public water rights both upstream and downstream of the dam, the Department is proposing to issue a new operating order that would result in water levels and flows that more closely match the natural pattern of water levels and flows of northern Wisconsin flow-through lakes, rivers, and associated riparian wetlands."*

- b. Current operation works well and/or not enough consideration of upstream issues

### **Comments**

A number of comments reflected the perception that no changes are needed since the current operating order has been in place and has worked well for +/- 70 years. With these operations, many people also commented that the Chain of Lakes and river downstream of the dam currently have exceptional recreational and tourism value as well as high quality river, lake and wetland habitat that are inhabited by diverse and healthy fish and wildlife populations. Another issue commonly raised was the perception that with the long length of time that current operations have been implemented, fish and wildlife populations have been able to adapt to the current management of water levels and flows. Many comments that described these perceptions also included the opinion that changes should not be proposed since there would not be any meaningful improvements that were worth the anticipated economic and other impacts.

The number of residents below Rest Lake dam are very few compared to the Manitowish Waters Chain. They knew the summer/winter flow levels when they bought. They feel if the levels in summer are dropped that they'll have more constant water. Any water level that the dam would drop would only result in a temporary increase and then would return to the constant flow at the level or any level the dam would hold back. We have problems with drought, low stream levels, cranberry growers, fish depletion from spearing, evaporation and AIS. Please do not add to the environment issues we already have affecting our Chain and change the 70 years of constant flow.

I disagree with the comment or conclusion that the current operation of the Dam creates surface water levels and flows that are substantially different compared to the natural annual pattern of levels and flows on northern Wisconsin lakes, rivers and wetlands. I strongly disagree that the flow of the water somehow negatively impacts the Manitowish river system and the Chain of Lakes which are affected by the Dam's operation.

Upstream water level changes should not be made to benefit a few who chose to build in a natural flood plain. The majority should rule here, not special interest groups.

The EA fails to give proper weight to the vested interests of the public above the dam and is therefore biased toward downstream resources.

While we agree with the fundamental goals of flow-regime restoration and endorse the underlying principles behind the desire to restore the ecological integrity of Wisconsin's rivers, the Manitowish Waters Chain of Lakes is today a heavily developed artificial waterway; the balance test needs to recognize both the needs of the natural resource with those of the public who are now part of the system. While a pure natural flow-regime makes a lot of sense in an undeveloped watershed, managed flow-regimes needs to be based on both the needs of the resource and the public; the WDNR proposed regime is currently too biased towards the downstream resources. We feel with more rigorously applied science and better data, a balance of both needs could be reached. Unfortunately the EA does not provide the analyses necessary to determine if the proposed action achieves this balance.

Page 77, Part 15 (a): This section addresses the long-term or short-term environmental consequences of the proposed project. The current write-up outlines the positive long-term benefits of the project in the eyes of WDNR. However, the flow regime on the Manitowish Waters Chain of Lakes has been in place for almost 100-years. During that time many species have adapted to the new system. In any major ecological change their will be winners and losers. This section of the EA addresses the potential winners but to be balanced should also identify those species that may be impacted by the proposed action. For example some wetland plant species will be enhanced by new flow condition others may be lost from the system. The EA needs to identify these winners and losers so a value judgment can be made as to the impacts.

On page 56 the DNR makes the following statement in the 1,500+ acres of riparian wetlands, oxbows, and backwater sloughs, the river's spring flood pulse is the driving force which sustains all life history needs of the plants and organisms (aquatic and terrestrial) that depend on these areas. Both the current operation and the 1939 order would result in disrupting this flood pulse each spring. Clearly these 1500+ acres are by now a product of the current operation, and there is nothing still being disrupted. Again it could be different, and better for some life forms, but the DNR does not have free reign to misrepresent plant succession and overstate environmental degradation to support its desire to make a change in the dam operation.

### **Response**

The abstract of the USGS report (appendix II) notes that records are available from the CFIC for the water levels on the Chain and the discharge at the dam from 1973 to current. Current operations can be shown to have been implemented for at least 40 years. Those operations do not follow all of the provisions from the 1939 order and this issue will be described in more detail on page 38 of this document. Throughout the EA, the affected environment as it currently exists after many years of similar management of water levels and flows is described in detail. Some aspects of the affected environment may be considered to be working well or not working well depending on the individual's perspective. Many of the impacts described in the EA are based on field studies that documented the water depths needed at specific times of the year for navigation, the diverse assemblage of plants, fish, wildlife, and other aquatic organisms, and other aspects of the Manitowish system.

Another issue woven into the comments above is centered on the opinion that since there are many more homes located on the Chain of Lakes compared to downstream, that upstream water issues should carry more weight in any decisions that are made. It is important to understand that current law limits the Department's ability to factor in the number of people that live in certain areas of the affected project area. Many Department decisions, particularly on regulatory matters, must, by law, be based entirely on a technical analysis of whether or not the proposed activity would meet the applicable standards established in the laws and administrative rules. In these decision-making circumstances, the need to balance and protect public rights in navigable waters needs to consider public interests that are defined on a broad statewide perspective. Additionally, the environmental analysis needs to consider both upstream and downstream public interest with equal weight. The analysis describes the impacts that current and alternative operations have both upstream and downstream of the dam in considerable detail.

### **c. Water level expectations**

#### **Comments**

I live on the Turtle Flambeau Flowage and I believe that when people live on a water storage reservoir like the Manitowish Chain or the Turtle Flambeau Flowage, we do so with the understanding that water levels will fluctuate, especially in drought years.

As a property owner on the Waupaca Chain-O-Lakes and a Lakes Association Board member I would advocate for a more natural seasonal variation of water levels for my own community. We have been able to maintain the natural water level pattern throughout the years here on our Chain.

Downstream owners have clearly purchased, improved, maintained, and retained property with no expectation of changes in water management practices.

Regardless of the original intent, generations have purchased property and made improvement based on that understanding, including; construction of permanent dock structures and boat houses that don't contemplate ice issues. Construction of riparian and other barriers along shorelines that don't contemplate being frozen in. Low weed densities along sandy shorelines due to winter freeze out. For those in shallow bays, less accumulation of decaying biomass (a.k.a. muck) that encourages parasites like Duck Itch.

The DNR is about to produce a new operating order with sole intention of increasing the winter water levels to have more water flow over the dam in the spring and summer. Over the decades the 1300 property owners have built their shorelines with permanent piers, boat houses and retaining walls all under the assumption that the lake levels would be dropped in the winter, this is the way it has always been since 1939.

The water in the Manitowish Chain is a public resource and it should not be managed to protect private docks and shoreline structures in the winter. In other words the current practice of managing the water flow levels; draw down in the winter and the narrow elevation in the summer is not consistent with the DNR mandate to protect natural resources for the benefit of all citizens.

#### **Response**

When people buy property on waterways with water levels and flows that are controlled by a dam, there is no guarantee that the operation of the dam will always stay the same or that the dam will always remain in place. Many dams in Wisconsin have had order modifications that change water levels and flows and/or modify winter drawdowns. These changes are implemented either in response to proposals by the owner of the dam or issued by the DNR to address impacts to public water rights. As described in the EA on pages 3-8, the Rest Lake dam itself has had several order modifications prior to the current order as the purpose of the dam changed, including a petition by property owners to reduce the winter drawdown to prevent shoreline erosion and avoid fish stranding.

#### **d. EA background / history section**

#### **Comment**

One commenter provided extensive historical information to describe the history of logging and the changes that occurred when timber was no longer transported on the Manitowish River but to different sawmills with the development of railroads in the Manitowish Waters area. Other notable historic sites were also described including local resorts and the fish hatchery on the Manitowish River just downstream of the dam.

#### **Response**

We appreciate the time spent providing this historical information for the Manitowish Waters area. The detailed overview of rail line development and its effect on both dam operations and the establishment of resorts and public recreation on the Chain demonstrate the history and background information provided in the EA (pages 3-5) is historically accurate. However, we do not believe this adds any new information that would be necessary to include in the analysis.

#### **Comment**

Page 3, last paragraph: The second sentence states, *"As the timber resources in the area were depleted, the water stored in the reservoir above the Rest Lake dam began to be utilized for other uses including flood control, navigation, and hydropower generation."* The paragraph should also state that recreation, such as fishing, boating, sightseeing and swimming, also are important activities that take place on the Chain of Lakes.

**Response**

The subject of the last paragraph on page 3 of the EA is to explain the purpose of the dam from the perspective of the dam owner (the Chippewa Lumber and Boom Company) between 1887 and the early 1900's. The fact that the popularity of the Chain for public recreational was already well established in the early 1900's is described on page 4 of the EA.

**2. Issues on the Manitowish Chain of Lakes.**

- a. Higher water levels with ice

**Comments**

Many comments were received that described the ice damage to shoreline structures that people expected to occur if water levels on the Chain were kept higher over the winter months. The types of shoreline structures described in the comments included seawalls, riprap, permanent piers, boat lifts, and wet boat houses. The extent of ice damage anticipated by different individuals ranged from damage requiring periodic maintenance to the complete destruction of all shoreline structures on the Chain. Other comments expressed concern of ice damage causing excessive erosion to natural vegetated shorelines.

A number of comments described the costs of replacing permanent piers with removable structures. Another cost associated with higher winter water levels that was described was associated with having to hire someone to remove and store piers and boatlifts in the fall and to install these structures in the spring. Estimates of these annual removal and installation costs ranged from \$800 to \$3000 per year. The concern with the costs to install and maintain aeration systems over the winter months was also expressed.

Another issue raised was the concern that the value associated with a boathouse that is currently wet in the summer and dry in the winter would be lost with a higher winter water level. Other comments stated that there would be negative aesthetic impacts caused by storing piers and boat lifts on the shoreline as opposed to on the dewatered lakebed over winter. Another issue raised was the concept that any changes to winter water levels should be slowly phased in to allow people to compensate for any financial losses of their current expenditures in permanent structures over time.

**Response**

We agree that the alternatives associated with an earlier refill with ice on the lakes or a reduced winter drawdown could cause increased potential for ice damage to shorelines and structures. This issue is addressed in the EA on page 62 and pages 75-76.

The numbers of structures on the Chain along with potential structure values, maintenance costs, and property values issues that are included in some of the comments are addressed in the economic impacts section of this document. The comments about shoreline erosion, aesthetic impacts, and phased implementation of alternatives are also addressed in other sections of this response to comments document.

**Comment**

Many commenters described the limited space on their shorelines to store structures on their property due to steep banks, seawalls, zoning restrictions, and shoreline vegetation.

**Response**

To address these observations, we hereby amend the EA on page 45 (Shoreline Structures) to include the following. *"The amount of space on a particular shoreline to store piers and boat lifts overwinter is quite variable. Many shorelines on the Manitowish Lakes, along with many Wisconsin lakes, have limited areas to store structures due to steep topography, vegetation, and/or narrow lot width."*

Because of these physical shoreline factors, on page 75 the EA described that to avoid ice damage to structures that *“more landowners would likely remove their piers at the end of the summer”*. The narrative did not state that the only option would be to store the structures on the landowner’s shoreline. Some landowners may choose to have piers and boat lifts stored offsite, others may choose to modify or replace piers, and depending on the location, some owners may choose to leave their pier in place.

#### **Comment**

There were a number of comments stating that seasonally removing piers and boathouses should not be considered a hardship since lake property owners all over the state have to contend with ice action to their shoreline structures. Others commented that wet boathouses and permanent piers are common (and not destroyed by ice) on many Wisconsin lakes with no winter drawdown. These comments also reflected the observation that the same methods to protect and maintain the structures on other lakes without a drawdown could be used by the owners of structures on the Manitowish Chain of Lakes.

#### **Response**

We agree with the fact that many lake property owners in Wisconsin have permanent shoreline structures and there are feasible ways to protect and maintain those structures. A new operating order would not remove a landowner’s right to protect their structures. This issue is addressed on page 75 and 76 of the EA.

#### **Comment**

A number of comments were made to state that hiring people to remove piers and boatlifts and to maintain shoreline structures would create jobs and support the local economy.

#### **Response**

We agree that this would likely occur and hereby amend the Social and Economic Environment section on page 75 of the EA as follows. *“With a reduced or eliminated winter drawdown, it is likely that the businesses that remove and maintain shoreline structures would receive additional work compared to what occurs with current operations.”*

#### **Comment**

On page 75 the DNR shows callous disregard for both Chain property owners and the facts with the statements made about property values and ice damage. Some people on lakes with no winter drawdown have big roller systems where they can push their dock out and retract it. Some have winch systems where they lift the dock. Most have portable systems that can be disassembled. There is no question that Chain property owners will eventually adjust to the new norm. However neither the DNR's table on page 46 nor the condescending paragraph 75 even attempt to address the havoc that will be imposed on Chain property owners as 70 years of infrastructure is subjected to similar conditions that occur on the majority of lakes in Wisconsin. The systems people employ on natural lakes and impoundments entail an affront of their own. Many of these property owners have roads down to the shoreline to provide access for equipment needed for annual installation and removal of their docks. The absence of these roads on the Chain is an aesthetic positive. In the fall, piles of removable docks are stacked along the shoreline of natural lakes - a substantial visual intrusion that the DNR ignores in its analysis, in addition to the aforementioned roads. What the DNR fails to acknowledge is that following the Public Interest Alternative, the Chain will have a combination of existing permanent infrastructure, new removable infrastructure, and a volume of iced out broken infrastructure. The DNR's rosy assumption for analysis is that all property owners have the knowledge, resources and ability to retrofit aeration systems and "other methods." The DNR should estimate the energy use required to implement aeration systems, and evaluate the effect of the associated noise on the ecosystem and property values. It is one thing to build a structure with the need to address ice damage engineered into the original design. Retrofitting this need is an entirely different proposition, and it is bewildering that the DNR fails to make this distinction. It is assured that many property owners will be unable to do so, or will simply fail to see the need until it is too late. There will be a lot of nails in the water, and this is not reversible as specified on page 77. The DNR's statement on page 77 that all of this remediation will occur "within months" is solely the product of fertile imagination. It will be outright havoc, and it is incredible that the

DNR thinks this will not affect property values. What is the aggregate value of all the docks the DNR acknowledges will have to be removed? How many property owners will sell rather than attempt to cope with the new reality? Will there be sufficient new buyers to fill that void? If not - and probably not - property values will decline. If the DNR implements the Public Interest or Pass Through Alternative, the state of Wisconsin should commit to carefully monitoring property values and automatically adjusting property tax valuations for a 20 year period following the decision.

### **Response**

The Department has a responsibility to protect and balance broad public interests in navigable waters. These are difficult issues to work through to find the proper balance of competing interests while also carrying out the standards of applicable state laws and administrative code regarding lakes and rivers. We disagree that the Department's analysis was written with a condescending tone for concerns that many people have with potential ice damage to shoreline structures. Those concerns are valid, are reflected in the EA, and are included in the scope and range of issues that the DNR needs to carefully consider when evaluating a potential new operating order.

To address the issues raised with respect to aesthetic impacts, we hereby amend the EA on page 75 as follows. *"With the current winter drawdown, many people move their boat lifts and pier sections to the lake's edge in areas that are dewatered during the 3.5 foot winter drawdown. If the drawdown was reduced and structures were moved up onto shorelines, both would have a very similar aesthetic impact. Overall, a reduced winter drawdown would be considered to lessen aesthetic impacts by decreasing the amount of dewatered lakebed and stump fields that are current visible for more than 6 months out of the year."*

Although private roads to access shorelines do exist, DNR staff have not observed this as a common lake lot feature on water bodies that do not have a winter drawdown.

To address the issue of the structures potentially being built differently due to the current winter drawdown, we hereby amend the EA on page 75-76 to reflect the following. *"There has not been any evidence provided or observed by DNR staff to indicate that the shoreline structures on the Chain were constructed differently compared to structures built on waterways that do not have a winter drawdown. Some structures may have been built to deal with ice at the 7' 3" elevation that would occur if this spring refill provision of the 1939 operating order was followed. Also, ice action is not the only force that can damage structures and the probability that a structure would be impacted by ice depends on the location and lake characteristics adjacent to the structure. All of these factors could affect the methods considered for construction or maintenance of shoreline structures. Each structure is different, and it is not feasible to have a structural engineer to try to guess why a structure was built the way it was."*

To address the concerns expressed regarding the ability of landowners to react to a new operating order, we hereby amend the analysis to include the following on page 49 under the section titled Manipulation of Aquatic Resources. *"When a new operating order is issued, we anticipate that landowners with structures that would be susceptible to ice action could feasibly get their structures evaluated, systems permitted, and installed within a season. The Department may consider modifying the timing of implementation or could consider a phased implementation to allow CFIC and affected landowners time to adjust to changes in water levels and flows."*

Another issue identified is that the Department's analysis failed to provide an evaluation of the impacts on energy use that would be required to install and run aeration systems to protect structures from ice damage. The response to this issue is addressed in the next section.

## b. Impacts of aerators

**Comments**

Multiple individuals expressed the concern that the appeal of winter sports on the Chain such as cross country skiing, snowshoeing, ice skating, and ice fishing would be negatively affected by the number of aerators that would need to be installed to protect structures from ice damage. The safety concern associated with having aerators creating open water during the winter was also raised.

**Response**

It is not feasible to be able to accurately predict the number, type, or size of aeration systems that landowners could choose to install. To more fully address the impacts of aeration systems we hereby amend the analysis on page 76 to reflect the following. *“Additional property owners may choose to install aeration systems on the Chain. Aerators installed on existing legal structures (pier, retaining wall, piling, etc.) do not require a permit if sized and placed so that it does not disturb the bed sediment or impact a neighbors riparian rights. Electric aerators use energy and would be expected to minimally increase noise levels nearby when the lakes are frozen. Certain options could be employed to keep cost, noise, and energy impacts to a minimum including selecting the right size system, using a timer to operate for a few hours daily, installation of temporary “skirts” around the system, and correct system placement. This method of preventing ice damage would result in areas of open water and thin ice that can create safety hazards. These areas need to be adequately marked to prevent accidents from occurring. The open water areas would not extend much past the structures and would therefore not be expected to impact winter recreational activities such as cross country skiing, ice skating, snowshoeing, and ice fishing.”*

## c. Lake contour maps

**Comment**

On Page 19, the third paragraph it states, *“The one foot contour maps of the lakes on the Chain along with aerial photos taken at a range of water levels provide useful information to show the extent, location, and type of open water aquatic habitat.”* However, the DNR lake survey maps only show 5-foot contours. Is this a typo or does WDNR have more specific lake bathometric maps other than those provided?

**Response**

Thank you for pointing out this error. The maps found in appendix III of the analysis do not have 1-foot contours. With the exception of Alder Lake, which only has 5-foot contours, the other lakes on the Chain have a 3-foot elevation contour that can be used to visualize the approximate area and locations of lakebed that is dewatered as a result of the current winter drawdown. We hereby delete the sentence referenced above and amend the EA as follows: *“The contour maps of the lakes on the Chain along with aerial photos taken at a range of water levels provide useful information to show the extent, location, and type of open water aquatic habitat.”*

## d. Pier registration

**Comment**

Enclosed is a copy of an accepted registration issued by the WDNR for our pier. This registration allows me to include the pier as a permanent part of my property. Is the WDNR by raising or lowering the water levels differently from when this acceptance was given, responsible for any damage to my pier and boat lift?

**Response**

Pier registration provides landowners with a self-registration process to document that existing piers were in-place and exempt from new permit requirements. Pier registration does not provide insurance for any pier damage, including damage caused by changing water levels.

e. Low water levels on the Chain of Lakes

**Comments**

Many comments appeared to reflect the perception that there was a specific DNR proposal that one of the alternatives described in the analysis was a preferred alternative that would lead to a high frequency of low summer water levels on the Chain.

**Response**

The USGS analysis shows that the current 3.5 foot winter drawdown results in low water conditions on the Chain for more than half of the year (page 50 of the EA). The perception that the Public Interest or Passing Inflow alternatives would result in a more frequent occurrence of water levels below 8'0" compared to current operations is not accurate and is not reflected in the EA. As stated in the Department's overview of the proposal, a more balanced approach to managing water levels and flows would include reducing the frequent low water conditions that currently occur upstream and downstream of the dam.

**Comments**

There's the problem of dealing with drought years. Whatever their frequency, the current 42 inch drawdown makes it much harder to fill the basin in the spring. Low water in the summer harms the recreation our tourist economy depends upon, harms property owners who live in shallow bays, harms the lakes by exposing shorelines that should be underwater. It makes sense to reduce the drawdown in order to have a better chance of fill-up, and of sending more water downstream.

We would welcome more water October through June. It is very difficult to get around the lakes for prime late season musky fishing as it stands. And most years this applies to the spring fishing opener as well. Our season is so short; it is a pity to limit use of the lakes in this manner.

**Response**

We agree. The current operations result in low water conditions which often occur during the spring fishing opener, throughout the summer in low precipitation years, and in the fall when people target muskies or hunt for waterfowl. The EA also explains that the most important factor influencing the frequency and extent of low water conditions is the extent of the winter drawdown and waiting to refill after most of the spring flows have passed downstream (pages 7, 50, 53, & 70 of the EA).

**Comment**

The EA does not even attempt to explain how often or how far summer water levels will fall below historic averages.

**Response**

The EA explains that by eliminating or reducing the extent of winter draw down, lower summer water levels would be expected infrequently only during natural drought conditions when many regional lakes and rivers are also experiencing low water conditions. The anticipated frequency and extent of expected low summer water levels could be more precisely calculated when a draft operating order is prepared that outlines specific water levels and flows.

**Comments**

The EA grossly underestimates the adverse impacts to navigation that will be caused by the proposed order.

The MCDF survey results clearly indicate that if water levels are lowered in the summer, the Chain will experience a host of serious navigational problems.

Based on feedback that CFIC has received in the past, summer lake levels of less than 7'8" become problematic for the recreating public.

A number of comments received raised concerns about the impacts of low summer water levels on the Chain. Specific issues that were raised included:

- the identification of specific navigational problem areas
- the need to extend docks to launch boats and the associated cost
- loss of the ability to navigate the entire Chain of Lakes
- boat houses becoming unusable
- concern for boating safety with rocks and tree stumps being exposed or close to the water surface
- inability to use a mechanical weed harvester
- inability to use the boat launch at Clear Lake
- reduced property values with low water levels
- increased weed growth with deeper light penetration
- more exposed mud flats and wetlands that allow exposure to yeast and fungi

### **Response**

The low water concerns described in many of the comments above are accurate. It is unclear what data was used by CFIC to reference a specific water elevation. The EA describes the many negative impacts associated with low water conditions on the Chain of Lakes including impacts to navigation, recreation, safety, tourism, aesthetics of dewatered lakebeds, wild rice, dewatered lakebed and wetland areas, etc. With a more balanced approach to managing water levels and flows, the occurrence of low water conditions and associated navigational impacts would be largely avoided. There would also not be a need to extend piers as was mentioned in a number of comments.

There were also many useful comments which identified specific areas where navigation becomes difficult during low water conditions. To improve the accuracy of the analysis, we hereby amend the EA to include the following narrative on page 65. *“While different types and sizes of watercraft have different draft and different water depth requirements to operate, some of the areas can become difficult to navigate with large craft during low water conditions include the shallow channel at the Clear Lake Road bridge (between Clear and Fawn Lakes), Papoose Bay on Rest Lake, the NW and SE bays of Rest lake, the new bridge on Alder Lake Rd, the channel between Rest and Stone Lakes, the channel between Stone and Fawn Lakes, the channel between Spider and Island Lakes, the SE side of Manitowish Lake, and the Trout River between Manitowish, Alder, and Wild Rice Lakes. Additional areas can be identified by reviewing the lake contour maps located in Appendix III”*

- f. Impacts to streams flowing into the Chain of Lakes.

### **Comment**

Drawdown of the Chain to benefit the river flow and water depth below the dam will have a very detrimental affect not only on the Chain, but it will affect all streams flowing into the Chain.

### **Response**

We agree. Operation of the Rest Lake dam affects water levels not only on the Chain of Lakes but also portions of the streams flowing into the Chain. The extent of area affected by the frequent low water conditions created by current dam operation is described on page 11 of the EA.

- g. Dams in the Manitowish River watershed.

### **Comments**

On page 14 the DNR makes reference to 3 dams on the Headwaters of Rest Lake Reservoir. I do not understand why this material is included in the document, but since the DNR brought it up, I argue that the statement misrepresents the Northwoods reality. The height of Boulder Lake is augmented by the rock check

dam visible upstream from Vilas County K. Whitney and Little Crooked Lake have little earthen works at their outlet that augment the size of the lake pool. There are little structures all over Northern Wisconsin that expand the pools of lakes. I'll accept the Rest Lake Dam's alteration of seasonal peak flows as the major difference, but the DNR should accept that it has become fixated on the Rest Lake Dam.

The only question I have on the analysis would be why no attention was given to the water flow on the Manitowish River above Hwy K. Is there not a dam upstream of Boulder Lake?

#### **Response**

The nature and location of dams in the headwaters of the Manitowish River system were described to evaluate whether or not any of those structures may have a large influence on inflows to the Rest Lake Dam. A number of authorized dams were not included in this section of the analysis. We hereby amend the EA with the following narrative on page 14. *"There are a number of dams located in the headwaters of the Rest Lake Reservoir including the Fishtrap and Boulder Lake dams on the Manitowish River, the Whitney Lake dam (located on a tributary to Island Creek), Stevenson Creek dam (a tributary to Trout lake), and two dams on Mann Creek (a tributary to the Trout River). There may also be other waterway obstructions located in the headwaters of the Rest Lake Chain as well. These structures have little to no measurable impact to the timing or extent of inflows to the Rest Lake Chain."*

#### **h. Fish and Wildlife**

#### **Comment**

I would agree it is intuitive that more closely matching the annual stream flow hydrograph to the natural regime would also match the life cycles of the dependent life forms. However in the impact analysis the DNR fails to acknowledge that the system must have formed some sort of equilibrium over the last 70 years. If the fall drawdown adversely affects a certain species of frog, why are these frogs still present in the system? Are we talking about the anguish of an individual pumpkinseed stranded in the reeds, or are we talking population dynamics? Figures 35a, 35b, and 35c of the EA appear to be an emotional appeal to the animal rights crowd, more than scientific impact analysis. The truth is, changing the system now would benefit some life forms and adversely affect others. Instead of acknowledging this fact, the DNR overreaches on the negative. For example page 53 the EA specifies that spring fill would interfere with nesting loons, when there is no evidence that loons are currently enduring brood rearing problems sufficient to adversely impact full occupation of the season long habitat. The birds that occupy the Rice Creek side of Island Lake have raised young consistently over the last 40 years. Is there any evidence that there are fewer loons on Chain Lakes compared with than other lakes in the region?

#### **Response**

To address the issues raised above, we hereby amend the EA on page 60 to include the following statements. *"The Department's analysis of fish and wildlife impacts focuses primarily on types of habitat that require sufficient surface water to be utilized by a wide variety of fish and wildlife at specific times of the year. These areas may be temporarily utilized by different upland species when they are drained of water. Even for these species, the current timing of water levels and flows is very disruptive. If upland species try to nest, feed, or utilize these areas for cover, they are forced to relocate once the water levels on the Chain rise. This may also occur below the dam when more flow is passed downstream after the Chain is refilled to the 8' 6" level. The species that require surface water in aquatic habitat as part of their life cycle simply cannot adapt to dewatered habitat areas during critical stages of their life cycles."*

To address the comments centered on loons, we hereby amend page 53 of the EA to include the following. *"In terms of loon nesting success, based on limited survey data, in some years (2007) the nest success rate was above average, and in other years (2010) nest success was below typical. Extensive survey effort with frequent nest monitoring would be needed to determine the effect that current operations have on nesting success rates and overall loon populations. Such surveys have not been conducted. What is described in the*

*Department's analysis is the habitat chosen by loons and the potential for nest failure with rising Chain water levels during their nesting period."*

### **Comments**

I am strongly in favor of leaving the Chain at the higher level year round. Flooding the Manitowish River in the fall and our Chain in the spring serves no good purpose for the environment. We live on the Chain and this past spring, we watched a goose sit on a nest in front of our hose for nearly 3 weeks as the water in the Chain was rising. The water eventually inundated the nest and it was abandoned. How do we calculate how many nests fail along our shores as we manipulate the water in the spring? At the same time-downstream fish, vegetation and bird habitat is starved for water as we fill the Chain. What is the cost of that?

It is also clear that year after year, randomly varying water levels (on the Chain with existing operations) wreak havoc with fish spawning and wildlife habitats: some years under water, others high and dry.

Reduced water level fluctuations may increase biodiversity in the Chain of Lakes and be an overall benefit the fishery.

Don't change dam height unless for emergency. Keep it at 8'6" year round to help with fish spawn on Chain and river below dam, all fish! The Manitowish River used to have a great walleye run from flowage every year.

### **Response**

We agree. The comments above are addressed in the Department's analysis on pages 53 – 55.

### **Comment**

The walleye population on the Chain appears to be dwindling and bass have pretty much taken over. Each spring, early walleye fishing grows less and less popular due to imposed limits and lack of stocking. It is difficult to justify why one resource takes precedence over another.

### **Response**

As described in the analysis on page 29, fisheries surveys have found that walleye are currently the most abundant gamefish on the Chain. There is no evidence to show that a strong shift in the fisheries community has occurred under the current operation of the dam or due to imposed limits or stocking efforts.

## **i. Wetlands**

### **Comment**

I'm sure everyone will stipulate that the shallow aquatics zones get drained as shown in the EA Figures 31, 32, 33, 34, and 36. But weren't many of these areas, notably at the star on figure 31, black spruce bogs prior to the installation of the dam? There is a stump in plain view in Figure 32. The text implies that before the dam was in place, these were all rare wetlands, now lost.

### **Response**

We agree. As described on page 20 of the analysis, many areas of submerged stump beds on the Chain were likely forested wetlands before the dam was constructed. To provide additional clarification, we hereby amend page 53 of the EA as follows. *"When the dam was constructed, the hydrology of these areas changed substantially, and these forested wetlands were lost in the sense that they changed to exhibit characteristics and ecological functions of aquatic bed wetlands. Under the current operation of the dam, the ecological functions of these aquatic bed wetlands are negatively impacted by the current timing and extent of dewatering in these areas."*

## j. Invasives

**Comments**

The more stable water level pools above the Dam associated with the DNR proposal would likely result in increased aquatic vegetation on the shoreline, an advantage trumpeted by the DNR. However the DNR's incredible assumption for analysis is that native aquatic plants will advance into the empty ecological niche the DNR's proposal will create. Completely absent is any consideration that curly pondweed or some other invasive will win the race to fill this newly created vacant habitat.

Will the higher winter water levels help spread the Curly leaf pond-weed, that is already established in my Chain-of-Lakes along with other invasive species. Seems to me you should be much more concerned about that.

What would be the impact on the growth of aquatic invasive species? We already have curly leaf pondweed.

Page 70, first paragraph: The EA, "Additionally, increased organic matter accumulation would likely occur in the near shore zone and over time, a greater density of aquatic plants would likely become established. More vegetation in these areas would provide additional food and cover for a wide range of fish and wildlife species." While we agree that more vegetation will provide additional food and cover, the EA does not address the issues of what types of vegetation will be established and at what density. While we are sure WDNR's goal would be for the newly vegetated areas to be dominated by native vegetation, disturbed areas are often re-vegetated by pioneer species that include several exotics such as Eurasian watermilfoil (*Myriophyllum spicatum*), and Curly-leaf pondweed (*Potamogeton crispus*). These exotic species are already in the Chain and could easily spread in the disturbed areas. In some areas vegetation could reach levels that management of nuisance conditions may be warranted. These issues and their cost of control should be addressed in the EA.

Any summertime draw down will also increase the speed of flow and also increase the movement of aquatic invasive species (A.I.S.) into the Chain. Rice creek is full of A.I.S.

**Response**

We agree. The potential for the establishment of invasive species was only briefly addressed in the discussion of impacts associated with a reduced or eliminated winter drawdown. Because each lake and shoreline has unique characteristics, with a reduced or eliminated winter drawdown, it is not feasible to fully predict the exact composition and plant density that would establish in the current 3.5 foot drawdown zone. We hereby amend the Department's analysis in two areas to address the issues raised in the comments above.

Page 76. *"Along the shorelines of the Manitowish Chain, reduced dewatering of the current 3.5 foot drawdown zone would likely result in a higher density of aquatic plants becoming established closer to the shoreline. The timing, density, and plant composition that would become established on a specific shoreline is based on many complex factors and is impossible to fully predict. While there is a chance that the near-shore drawdown zone could become inhabited by aquatic invasives with more consistent inundation, the likelihood of this is reduced the greater the distance from the source of colonization. At this time there is no known presence of Eurasian water milfoil in the Chain, and curly-leaf pondweed generally prefers mucky substrate which is less common in the near-shore drawdown zone. With this in mind, it is more likely that the area will re-colonize with pioneer native species and not with a monoculture of an invasive species."*

Page 78. *"If the winter drawdown were reduced or eliminated, the establishment and growth of aquatic plant species near shorelines is difficult to fully predict. To deal with potential problems with invasive species, adaptive management strategies or provisions for periodic drawdowns could be considered as part of a new operating order."*

## k. Land use and tourism

**Comment**

On Page 45 of the EA in the section describing tourism, we suggest that the first sentence of the first paragraph be changed as follows. *"The high density of lakes, rivers, wetlands, and public recreational areas attract many people who visit the area to boat, fish, camp, hike, paddle, harvest wild rice, bird watch, or engage in other activities that the region offers."*

**Response**

We agree and hereby amend the EA to include the changes noted above.

## l. Water quality and mercury

**Comments**

The mercury concern on page 61 is intermingled with some vague concern about "access" dangles on the page absent some supporting information. Is there a mercury problem on the Chain in Walleye relative to nearby lakes?

One individual commented that reduced water level fluctuations may reduce the bioavailability of mercury.

**Response**

The paragraph on page 61 describes the research done to show that the current water level fluctuations may contribute to higher mercury levels in walleye. The paragraph also directs the reader to a different section for a description of lake access and navigation issues that occur during different harvest seasons for this species. As described on page 17 of the analysis, the Great Lakes Fish and Wildlife Commission does have specific fish consumption advisories for some of the lakes on the Manitowish Chain. The analysis, however, did not list any WI DNR safe-eating guidelines and we hereby amend page 17 to include the following information. *"The WI DNR has not identified any lakes on the Manitowish Chain as having higher concentrations of contaminants where specific safe-eating guidelines would apply."* There are many factors involved in this issue and the analysis does not attempt to predict whether or not the mercury concentrations in walleye would reduce over time if the current winter drawdown was reduced or eliminated.

## m. Shoreline stability

**Comments**

On page 47 (paragraphs 2 through 4) the EA discusses shoreline stability and the issues of wind and ice on shore stability. Other factors that influence shore stability are the soils and shoreline slope. The soils around the Manitowish Waters Chain are predominately Rubicon sand, which is moderately erodible. The slopes at the shoreline are generally steep and due to the artificial water level on the Chain the shorelines are very erodible. The high degree of erosion is evident in the number of properties that have shore protection. Based on a survey by Ecological Research Partners, approximately 790 (65%) of the 1,226 parcels on the lakes have some form of shore protection. A discussion about soils, and slopes on the potential of increased shoreline erosion should be added to the discussion.

The EA also fails to consider that the lakes on the Chain have shorelines that are far more vulnerable to erosion than a typical Wisconsin lake. On the Chain, "the slopes at the shoreline are generally steep and . . . very erodible," as evidenced by the significant percentage of properties that have some form of shoreline protection. Because the Chain's shorelines are so vulnerable, the increased winter water levels proposed by the DNR threaten the Chain with a double whammy. Property owners without shoreline protection will face the risk of increased erosion and property loss as their shores literally fall into the lakes. And, property owners with shoreline protection will face the risk of extensive damage to those structures, which could cost

tens of millions of dollars to enhance or redo. Either way, the DNR's proposal will result in massive property damage to riparian owners.

I had a boat sunk in the past and must have a boat lift in the summer due to heavy waves. Also, the shoreline erosion is severe in places, thus the Vilas County assisted shoreline restoration on our property.

### **Response**

As summarized in the Department's analysis, there are many factors that contribute to shoreline erosion including shoreline development, vegetation, slope, wave action, soil type, etc. Additionally, many people chose to install riprap, seawalls, or other shoreline landscaping for reasons other than shoreline stabilization. To provide more detail regarding the impacts that current operations, the 1939 operating order, and alternatives with a reduced or eliminated winter drawdown, we hereby amend the EA as follows:

*"The Rest Lake Chain has been flooded since 1887, a period of 125 years. Flowage shorelines are inherently unstable. These changed water bodies all have a newly created shoreline and need time to fully stabilize through the development of the ordinary high water mark. This process includes the change in vegetation from upland vegetation to the vegetation which would normally be found at the ordinary high water mark (e.g. alder, willows, rushes, sedges, mosses etc.). These shoreline species require a nearly constant wet, but not necessarily saturated environment. It also takes time for near-shore shallow water vegetation to develop on flowages. Those shallow water plants, once established, buffer the effects of wave erosion. Higher shoreline erosion occurs in most flowages until a consistent long term water level allows the growth and development of a mature shoreline buffer. The development of a natural buffer on the Rest Lake Chain is hindered by the current winter draw down of the flowage. The availability of the water needed to sustain many of the plants is eliminated, severely hindering the growth and development of the plant communities necessary for a stable shoreline. The sudden fluctuation of water levels associated with the winter draw down of the Chain, in addition to the abnormal low water level conditions in the flowage in the spring early growth period, affects the establishment and development of shallow water aquatic plants. Rest Lake Chain would continue to be subject to erosion at the 8' 6" foot level unless the annual fluctuation of water levels was stabilized by reducing or eliminating the extent of the winter drawdown along with minimal summer water level fluctuations."*

### **Comments**

Page 47, Shore Stability: While this section discusses "ice jacking" caused by expansion of ice sheets, it does not discuss other winter erosion activities such as "Breaks up" in the spring when large sheets of ice can be blown around by the wind or "Freeze-thaw cycles" in un-vegetated lakeshore soils which can cause displacement of soil particles (called ice heaving). The EA write-up attempts to make the point that winter shoreline damage only takes place on large lakes like Lake Winnebago, however ice damage can take place on just about any lake. Most lake shorelines are protected by natural armoring that has taken place over hundreds to thousands of year of erosion and natural sorting of materials. On lakes with artificial elevations the shorelines have not had enough time to reach stability. The discussion in the EA does not provide a balanced discussion that allows the reader the ability to balance the impacts of the proposed project against the benefits. The cost to redo or enhance shore protection on the Manitowish Waters Chain under the proposed water changes could be in the tens of millions of dollars.

Page 75, last paragraph: The EA states, *"One potential impact to property would be the increased possibility of ice action to cause damage to permanent piers, wet boat houses, and other structures .... excessive damage would not be expected since the shorelines on the Chain are considered "low energy" shorelines for ice action due to the relatively small sizes of the lakes and limited fetch for wind to push the ice sheet."* This statement assumes that most shoreline damage by ice is from wind movement of the ice. Ice can also damage shorelines by expansion of the ice sheet, by ice that has frozen into the shore and pulls away as the ice sheet pulls away from the shoreline, or by frost heaving as water within the soil expands and loosens the soil material. Just because a lake has a "low energy" classification based on a wave height index is not a good indicator of potential ice damage.

**Response**

The environmental analysis describes ice action caused by windblown ice on pages 47 and 75. This type of ice action would include windblown ice pushing against or pulling away from shorelines as described above. The force of ice expansion on the shorelines of the Chain is described on page 47 of the analysis. While expected to occur, it is not expected to exert anywhere near the excessive force and wide spread damage that is found on larger lakes. As described on page 76 of the analysis, the amount of ice damage to structures is expected to be similar to other northern Wisconsin flowage lakes such as the Minocqua and Eagle River Chain of Lakes. There is no evidence that the action of ice on these systems has caused excessive, unavoidable, or irreparable damage to the numerous shoreline structures on these lake chains. Ice or frost heaving was not addressed in the analysis. We hereby amend the analysis to reflect the following. *“Under current operations, many shoreline structures exhibit signs of being affected by frost heaving. If the extent of the winter drawdown were reduced or eliminated, frost heaving conditions are expected to remain or may decrease if deeper water depths closer to the shoreline provided thermal insulation that reduced the number of freeze thaw cycles each year.”*

## n. Archaeological and historic sites

**Comments**

I would argue that any archaeological sites potentially impacted by 8' 6" water elevation have been long ago washed away. I realize the DNR cannot disclose locations of cultural sites that would dispute my argument. I would also suggest that shoreline erosion is in equilibrium with the current shorelines after 70 years. There may be exceptions to that on areas with steep shorelines. I'm having some erosion problems on my property on the north shore of Island Lake, but believe the culprit is boat wakes - with wake boarders the largest problem.

A suggestion was made that all of the Chippewa tribes need to be given the opportunity to review the EA and comment on potential impacts to cultural and historic sites. It was also suggested that references to coordinating with the Lac du Flambeau Tribe for cultural resources should be eliminated from the EA and replaced with reference to coordination with all of the Chippewa tribes. NPS NAGPRA is a database available to identify tribal area of interest for cultural sites.

The comment was made that higher winter water levels may increase shoreline disturbance from ice. Drawdowns and the associated dewatering of sites, however, may increase site access and loss of artifacts. Less drawdown and more near shore aquatic plants can also help stabilize shorelines from wave action. Riprap as a form of cultural site protection can also be considered a disturbance to certain sites.

Page 61, last paragraph: The EA states, *“If changes in operation would potentially cause erosion at an archaeological site, bank stabilization and shoreline protection techniques could be installed to prevent damage to these sites. Special techniques to protect archaeological sites have been developed for reservoirs.”* But at what cost and who would be responsible for these costs? This should be addressed in the EA.

**Response**

As described in the EA, there are numerous archaeological sites on the Chain. While many have been affected by the 8'6" water levels, these sites are still present and have not completely washed away.

We appreciate the comment to recognize that all of the Chippewa Tribes should be given the opportunity to review and comment on the Department's analysis. We hereby amend the EA on pages 61 and 75 and replace references to the Lac du Flambeau tribe with *“all of the Chippewa Tribes”*.

To improve the evaluation of potential impacts to cultural sites, we hereby amend the fourth paragraph on page 61 of the EA to include the following. *“With current operations and the 1939 order, the 3.5 foot winter drawdown may increase site access and loss of artifacts.”*

To acknowledge that riprap as a method to protect cultural sites may be associated with impacts, we hereby amend the fifth paragraph on page 61 of the EA to include the following. *“Riprap as a form of cultural site protection can also be considered a disturbance to certain sites.”*

Pages 61 and 75 of the EA are also hereby amended to include the following narrative to address the issue of funding that may be available to carry out shoreline protection efforts. *“If shoreline stability issues are identified at cultural sites either under current operations or modified operations, there are landowner tax incentives, grants, and other sources that may be available help to fund protection efforts at archaeological sites.”*

o. Cranberry operations

**Comments**

One individual expressed concern that the withdrawals (loss) for lawn irrigation and cranberry operations are not required to be permitted, regulated, and monitored. The commenter also provided the perspective that 22 cfs to 35 cfs for losses to cranberry operations is substantial and growing.

I would support a comprehensive system wherein fair standards for removal of water from the Chain by any party are identified, including cranberry operations. I say this realizing that the point is beyond the scope of the environmental assessment because it would require legislation. I have spent much of my life in the desert of the American West and am familiar with water issues and rights. Clearly Wisconsin has reached the end of the era where we can no longer ignore water issues and the environmental assessment does a reasonable job of raising awareness. While I support the continued operation of all existing cranberry operations, it is time to ponder the consequences of unlimited withdraw of water from multiple sources, and the way it limits our options for management of the dam. It is too bad the DNR and the Chain property owners are going to battle over the dam proposal, rather than work together on this emerging water issue.

I encourage DNR to look more closely at the cranberry operation withdrawals it identified during this EA process. If so much water is being withdrawn that river flow is reversed, that is clearly a problem.

Some of the cranberry growers as individuals own extensive lake shore properties on the Manitowish Chain too and individual views on the various options for the new operating likely vary among them. For whatever reasons the Draft EA attempts to put the cranberry growers in the middle of what will likely be a very lively and divisive debate as to what plan the DNR finally chooses on how to operate the Rest Lake Dam. We have no desire to be in that position and won't be the cause for division in this community.

The Chippewa and Flambeau Improvement Company (CFIC) believes the WDNR's estimates of water use by farming operations (22 cfs) is greatly underestimated during certain times of the year.

**Response**

We agree that the Department has limited authority to regulate the water quality and quantity as it relates to cranberry operations as described on page 16 and 17 of the EA. The analysis objectively describes the quantity and timing of water use needed for cranberry operations based on the data available. The maximum instantaneous water withdrawal rate estimated in the analysis is 37 cfs. This amount can be a large percentage of inflows to the Manitowish lakes and river system especially during drought conditions. Therefore, as described in the EA, cranberry operations are clearly an important factor that should be considered when drafting a new operating order to better balance water levels and flows.

**Comments**

The Draft EA states that there are 960 acres of cranberry operations adjacent to Little Trout Lake when there are actually 580. The dikes involved in our land are neither flooded nor irrigated. Please correct this misstatement.

On page 16, there are 112 acres of cranberry beds, not 177 acres.

Page 14 should indicate that there are two cranberry marshes that withdrawal water out of Alder Lake. One is located on the south end by Town Line Lake Rd. that is approximately 20 acres in size.

**Response**

We hereby amend the environmental analysis to more accurately reflect the current acreage of cranberry beds identified in the comments above.

**Comments**

Cranberry operations utilize water to flood beds for cold temperature protection, for winter freezing of the beds, in the spring to help thaw the ice, and at fall harvest. During flooding, when cranberry vines are not dormant, water is periodically recirculated about every 7 to 10 days.

Part II of the EA insinuates that our cranberry operations pumps regularly from the Chain; this is inaccurate and needs to be put into the proper perspective; our pump has probably not run for more than four or five months in total since its inception 65 years ago. The pump is used in times of extreme drought to keep Little Trout Lake from getting too low for us to pump to our farms, not to actually raise the level of Little Trout Lake, but to keep it at the same level or from falling further.

**Response**

The general summary of when water is needed for cranberry operations is addressed on page 14 of the EA. Based on the information available, the frequency of pumping is also accurately reflected in the EA as generally being needed only during drought conditions.

**Comments**

The cranberry discussion on page 76 fails to address water returned to the Chain through groundwater leaching and standard operations. I acknowledge that in drought years when water is drawn out to irrigate the vines, this return flow is limited. However other operations such as harvesting entail temporary flooding followed by the return of water to the original source. This distinction should be addressed in the environmental assessment.

Part II pages 15-16 of the EA states that much of the water flowing away from Little Trout Lake over the surface and underground flows to the Bear River Watershed instead of the Manitowish Chain; this is very much wrong. Little Trout Lake is about 9 feet above the MW Chain and there are natural and manmade drains all along the south side of the Chain from the Little Trout Lake Watershed to the Manitowish Chain. There is a beaver dam on Wild Rice Lake that comes from Little Trout Lake. There is a drainage ditch into Alder Lake and Little Manitowish Lake (not made by the cranberry growers). Sullivan's pond drains into Manitowish Lake from the east half of Powell Marsh ... There are underground springs all along Wild Rice, Alder, Little Manitowish and Manitowish Lakes that drain into the Chain from the Little Trout Lake watershed. Any water that is pumped from the Chain by the pump near Little Trout Lake is likely getting back to the source eventually and further, that water is temporarily, at least, prevented from flowing over the Rest Lake Dam where it will never come back. Furthermore, there are thousands of acres of lakes and swampland to the south and east in Lac Du Flambeau that are elevated above Little Trout Lake and draining toward it continually contributing water to the Manitowish Chain thru the above and below ground drainages. Yes, some water also flows to the Bear River watershed, but certainly not much or all of it. Additionally, State and Federal definitions of agricultural uses of water are considered "nonconsumptive" or borrowing of the water; it does not go away. The draft EA needs to be corrected to these ends accordingly.

Water from the cranberry operation near the Corn Lakes discharges back to the Trout River after draining through a wetland area.

### **Response**

The issue of where water is taken and returned for cranberry operations is described on page 16 of the EA as being a return of water (minus losses due to evaporation and evapotranspiration) via surface water channels and groundwater. We agree that water does not go away, but as described in the analysis, cranberry operations do cause a temporary diversion that can have an impact on water levels and flows of the Manitowish system.

The operation near Great and Little Corn lakes is accurately described in the EA as being returned via direct discharge and ground water flow (minus losses due to evaporation and evapotranspiration). The conclusion made in the analysis that most of the water used for the cranberry operations adjacent to the Little Trout Lake flows to the Bear River is based on the following factors: According to USGS maps, the elevation of the Little Trout Lake is 1610, the elevation of Alder Lake is 1601, and the elevation of Dead Pike Lake is 1596. Aerial photos and USGS mapping show drainage canals leading to both Alder Lake and to Dead Pike Lake. The USGS report titled "Hydrologic Investigation of Powell Marsh and its Relation to Dead Pike Lake, Vilas County, Wisconsin (Water-Resources Investigations Report 02-4034) indicates that groundwater around Little Trout Lake flows toward Dead Pike lake. Finally, DNR staff that manage the dams on Powell Marsh have frequently observed quick rises in surface water elevations in the absence of any precipitation events. The only known source of that surface water would be from the nearby cranberry operations. Although we still consider it likely that much of the surface and ground water from cranberry operations flows toward Powell Marsh and not the Manitowish Chain, the pathway of water is not clear and has not been studied in detail. To better reflect this issue, we hereby amend pages 15 and 16 the analysis to include the following. *"There is a complex series of canals and wetland areas adjacent to Little Trout Lake. Some of these drainages lead to the Manitowish River system and some lead to the Bear River sub-watershed. When the cranberry beds discharge water, it likely flows both toward Powell Marsh (e.g. the Bear River sub-watershed) and some also likely flows back to the Chain of Lakes."*

### **Comments**

With regard to the Draft EA, first a general comment and then some specifics to follow: The Draft EA, to a large extent, states that the cranberry producers are urging Option #3 or 4 for operating levels of the Dam over Option 1 or 2. This is simply not true. In the last 65 years the operations adjacent to Little Trout Lake has had no problem accessing water when needed in times of extreme drought to operate our pump under the existing Operating Order. With the possible exception of the summer of 2007 when the DNR erroneously required the dam operator to discharge more water than historically practiced in an extreme drought and the Chain went lower than the winter draw down level in mid-summer. Option 1 or 2, if followed, works for us and has done so for 65 years.

Adequate water levels are needed for water pumping at the cranberry operation near the Corn Lakes in order to have enough water pressure from the river to feed into the intake pump.

Page 62, paragraph 2: The EA states, *"Cranberry producers have indicated that pumping is difficult when water levels are low on the Chain because of the shallow water depths and the increased amount of plant material and other debris that is sucked into the pumps."* However, the EA does not address the issue that with a water level regime change there will likely be more aquatic plants in the Chain of Lakes, and that this will in turn impact pumping operations. This should be addressed on page 76 so as to provide a balanced picture of the potential impacts.

### **Response**

The analysis did not state that cranberry producers were pushing for a specific new operating order for the Rest Lake Dam but only that statements have been made by growers that pumping from the Chain is more

difficult during low water level conditions. It is also important to note that the comments made above concerning summer operations in 2007 are not accurate, and information describing the monthly inflows to the Chain during this year is described on page 16 of the EA. Also, although not described in the analysis, water levels in 2007 did not reach the levels referenced in the comments above.

To address the potential impacts of aquatic plant establishment on pumps, we hereby amend page 76 of the EA to include the following. *“In terms of the location of the cranberry pumps for water withdrawal, it is our understanding that the intake structures for most of the pumps are below the 5’0” water level elevation. Therefore, the potential for aquatic vegetation to interfere with pumping would likely be similar under both existing operations and alternatives associated with a reduced or eliminated winter drawdown.”*

#### **Comment**

Where did the cranberry water diversion information come from? This is not in the USGS report.

#### **Response**

To address this question, we hereby amend page 16 of the EA as follows. *“The evaluation of cranberry water use was not part of the scope of the USGS study, and therefore, is not in the USGS report found in Appendix II. The data was based on pump capacity information and water flows at USGS stream gages located just upstream and downstream of the water intake structure adjacent to Great and little Corn Lakes.”*

### **3. Manitowish River below the Rest Lake Dam**

#### **a. Lake Sturgeon and Redhorse**

#### **Comment**

I can't tell one redhorse species from another, but the deeper pools within the riffles between Vance and Benson Lakes are sometimes stacked with redhorse. I particularly remember one day I floated the river in September of 2007 when the water was particularly clear. I was amused to see one smallmouth bass in an incredible school of redhorse. I make this obscure point just in case the DNR is unaware of this key habitat. When I compare the text on page 74 to the hydrograph on page 50 it looks to me like we are within the preferred range for redhorse spawning of 75 to 150 cfs for late May and June, given the current management of the dam.

#### **Response**

Between Vance and Benson Lakes there is a stretch of rocky riffle river habitat just below the Highway 51 bridge that is described extensively in the analysis. The graph of the discharge of the dam on page 50 shows the long term median flows downstream of the dam that provide sufficient flow for redhorse spawning needs in May and June. Since the timing of the spring refill varies from year to year, the long term median flows do not show the minimum flows that are currently passed every spring. However, when looking at dam discharges on an individual year, drought condition minimum flows (that do not provide sufficient spawning habitat) are common in May and June.

#### **Comments**

There was never a self-sustaining population of lake sturgeon.

It is interesting that the DNR is concerned about the sturgeon spawning below the dam. At a meeting held by the DNR I did ask about the current population, however, they were unable to give me an answer to the question.

One species likely being impacted by the current management practices is Lake Sturgeon, which travels upstream to seek rocky riffles to lay eggs. The Environmental Assessment provides no facts to prove or disprove that current management practices promote protection of this resource.

### **Response**

The information and field study described in the analysis on page 43 provides strong evidence that this species is attempting to reproduce and survive in the Manitowish River system downstream from the Rest Lake Dam.

### **Comments**

My chief concern is the low river water levels in the summer, and at times that sturgeon spawn.

I was appalled to learn that the sturgeon are not reproducing because the dam disrupts their spawn. Loss of a naturally reproducing species in the Manitowish is a tragedy that can be prevented by altering the current dam management practice.

The exhaustive report created by your staff is to be commended. And I believe the logical conclusion of the report is to create an order that recognizes the value of the fishery and wildlife habitat in the Manitowish River. An order that will moderate the water flow to more closely resemble what nature intended which is Alternative III in your report. It seems everyone can give a little to make sure important species are allowed to thrive. For example, this is especially true of the Lake Sturgeon, those poor fellows who have such a short and incredible spawning season.

Page 43 last paragraph: the EA states, *“Detailed habitat models have been developed to quantify the water velocity, depth, and substrate needed for suitable spawning habitat (figure 29).”* On page 74 WDNR discusses the use of Habitat Suitability Index (HSI) models for sturgeon and greater redhorse but do not show the modeling results or the conditions under which the simulations were run. We feel that a more detailed habitat assessment is warranted for a project of this scope. We feel a more robust model such as the program RHABSIM or PHABSIM (Habitat Modeling and Weighted Usable Area) is needed to determine the potential weighed useable areas of existing or potential habitat.

Page 61, paragraph 3: The EA states *“...both the current operation and the 1939 order would often pass 40 cfs during the spring. This minimum flow would continue to limit the spawning success of lake sturgeon.”* While it is likely that 40 cfs of flow is too low to provide sufficient suitable habitat for lake sturgeon, what flow regime would be optimum given the slopes, cross-sections and substrate available? As shown in the figure on Page 2 flows above 40 cfs in the spring are frequent. The EA indicates that a natural flow regime would be beneficial. But the question still remains - Is all of the spring flow required in order to support a successful sturgeon fishery, or could a compromise flow regime be determined? We feel that additional habitat modeling is needed before a spring flow regime is determined. We also need to point out that during most springs flows are well above 40 cfs under the current dam operation.

Page 74 paragraph 1: The EA states, *“Suitable habitat for sturgeon and greater redhorse spawning was identified in the 800 foot section of rocky riffle stretch of river just below the Highway 51 Bridge. To determine the flow needs for both of these species, a river stage flow relationship was developed by measuring velocities and depths at five transects under various flow scenarios (figure 46). This information was used in habitat suitability models for each species and the following flow needs were developed. For sturgeon, river flows of 125 cfs begin to provide adequate depth in a limited portion of the spawning area. At flows of 200 cfs or more, almost the entire area of potential habitat provides conditions adequate for spawning. [...] The abundance and productivity of the both lake sturgeon and greater redhorse (state threatened) would be expected to increase with both the public interest and passing inflow alternatives since they are both expected to provide sufficient river flows downstream of the dam during the spawning period for both of these species.”* There are several well-established methods and models available for Flow-dependent habitat suitability modeling, which could be used for evaluating necessary and sufficient flows to

protect and promote sturgeon and redhorse populations. This paragraph provides an inadequate summary of what analyses were conducted; too little information on what results were found, and raises more questions than it purports to answer. Models such as RHABSIM™ or PHABSIM are designed specifically to address the question as to what incremental increase in weighted-useable-area (WUA) for a given fish species in given river reach can be expected with incremental increases in river flow. At minimum, suitable fish habitat in river systems is produced by a complex interaction among water depth, velocity, temperature, and substrate composition. Using a stage-flow relationship to determine the areal extent of water of sufficient depth for spawning is only one step in the process, and not sufficient for justifying the conclusions drawn in the EA. The EA should include a more thorough discussion of flow-dependent habitat parameters and how they interact with substrate and velocity profiles. Spatially-explicit models exist for Lake Sturgeon in Wisconsin [e.g. Daugherty, D., Sutton, T., & Elliot, R. (2009). Suitability Modeling of Lake Sturgeon Habitat in Five Northern Lake Michigan Tributaries: Implications for Population Rehabilitation. *Restoration Ecology*, 17(2), 245– 257.], and should be applied and analyzed in order to provide a better estimate for the expected improvement in sturgeon populations. These models also incorporate the consideration of other life-history stages (larvae & juveniles) which are essential to population success. We suspect that it is likely that there are other issues involved in limiting fish populations in addition to flow-related habitat. For example, an analysis of flows released from the Rest Lake Dam since the early 1970's (monthly medians calculated from daily flows recorded by the Dam Operator) show that river flows regularly are at or above the 125-200 cfs levels suggested in the EA. A more rigorous study of habitat suitability and analysis of limitations on sturgeon populations beyond spawning season appear to be warranted.

It would help to conduct a controlled study to see if more sturgeon spawn if the flow of the Manitowish River is suddenly increased. Salmon tend to run up into rivers and spawn only after a heavy rain and it makes sense that lake sturgeon would do the same, especially in the shallow rapids below Sturgeon Lake. The reason may be that there is a bigger chance that they'll all arrive at the spawning ground at once, instead of one-by-one. Releasing a bunch of water from the dam can simulate the effects of heavy rain.

We believe that the flows identified in the EA as necessary and sufficient to enhance sturgeon and redhorse populations and other benefits of the project are based on perfunctory science and cursory analysis of limited data. More rigorous tools for modeling flow-dependent habitat quality and quantity are readily available, and given the magnitude and complexity of potential impacts of changes in flow-regime management, they should be applied. The EA is weighted heavily towards benefits of a few target species and does not address impacts to non-target species or the public. The current EA raises more questions than it answers.

### **Response**

To provide more information on the modeling done to evaluate Lake Sturgeon habitat needs, we hereby amend page 75 of the EA as follows. *“The evaluation of sturgeon habitat needs is based on biological surveys and detailed flow-related habitat modeling using Physical Habitat Simulation Models (or PHABSIM). This model evaluates the habitat needs based on combined depth and water velocities associated with different river flow events and the outputs are in the form of weighted-useable-area (WUA) for Lake Sturgeon. The models were run based on data taken over a range of river flows at 5 transects located in the rocky riffle area below the highway 51 bridge (Figure 46). The habitat suitability curves are based on the methods and information taken from “Development of a Habitat Suitability Index Model for Lake Sturgeon” by Threader, Pope and Schaap, January 1998. The habitat suitability curves were adjusted based on Lake Sturgeon work in Wisconsin. Additionally, the aging and radio telemetry work done show that the seasonal movements of Lake Sturgeon on the Manitowish River indicate that they use the rocky riffle area below Highway 51 for spawning when there are adequate river flows. Evaluation of the flows downstream of the dam on a year to year basis demonstrates that most years, river flows are reduced to drought conditions that do not provide any suitable habitat for sturgeon reproduction. The exact timing and duration of these low flows varies from year to year and is therefore not fully shown when looking at the long term monthly median flows.”*

## b. River shorelines and bank stability

**Comments**

My husband and I own property downstream from the dam. Our property has flooded in the fall, our pier has floated away when the Chain has been flushed like a toilet, our pier has been high and dry in the summer, and we have had to go to different rivers to kayak in July. But I don't write because we have been negatively impacted by the ecologically backward management of the Chain. I write because DNR is poised to reverse this ecological backwardness, and I want to encourage the agency to continue forward. If that means our property floods in the spring, fine. That's what rivers are supposed to do. The plants and aquatic life need high water in the spring. The wetlands need water. The river and downstream ecosystems need appropriate seasonal flow. Alternatives III and IV both provide for this.

The river sometimes does not seem natural with erosion during period of high water followed by mud and reduced water quality as levels are lowered.

Downstream flows of ~600 cfs in fall of 2010 were causing erosion and destruction of docks.

The current operation of the dam results in quickly changing flows and high flows downstream of the dam when winter drawdown is initiated. While the DNR alludes to the impacts of these actions on shoreland erosion and riverbank slumping (p.62), there should be discussion of this in the description of the physical environment (in the section titled AFFECTED ENVIRONMENT) since this is an important part of the ecosystem that is impacted by the operation of Rest Lake Dam.

**Response**

We agree that a description of the river banks, especially in the higher gradient section of the Manitowish River, should be included in the analysis. To improve the accuracy of the EA, we hereby amend the document with the following narrative on page 23. *"The first four river miles below the dam have a higher gradient with faster water velocities, a limited wetland fringe, and forested river banks that quickly rise above the floodplain elevation (Figure 14). Areas of eroding river bank can be observed in several locations along this section of the Manitowish River. River shoreline erosion is a natural process. Although not studied in detail, the riverbank erosion may be magnified due to the current quickly fluctuating river flows that occur in the spring and fall during the refill and drawdown of the Chain."*

## c. Downstream impacts

**Comments**

The current fall drawdown and spring operation of the dam has caused damage to habitat and property below the dam. There is no doubt that the current policy favors Chain owner's above those who live below the dam. You get flooded in the fall and starved of water in the spring, just when Mother Nature has our neck of the woods flowing. The pictures show that it has led to environmental change over time, creating uplands where there were wetlands, messing with sturgeon reproduction, etc. I don't take these changes lightly. When we tamper with what Mother Nature created over eons, we degrade the Northwood environment we all profess to care about so much.

The current practice of drawing down the 10-lake Manitowish Chain 3.5 feet every winter, with the lost water being recaptured in the spring after the ice is off seriously impacts the ecology of the river and other water bodies downstream. The current management practices of the Rest Lake Dam are seriously impacting the ecology of the Manitowish River.

A more natural seasonal variation in water levels will improve the fishery and boating activities on the river as well, thereby also adding to the state's economic health.

The EA is based upon an exaggerated claim that the dam is disrupting the "natural flow regime" and therefore overstates the "benefits" of "restoring" the natural flow regime.

When the river water level is low fish will not have enough water to swim through.

At times we have been shocked at the level of the river. It cannot be environmentally sound to have this great of a fluctuation. The birds and critters that live along and use the river must go through terrible trauma as the river is allowed to go up and down.

It has come to my attention that the Manitowish River lakes are being drawn down in ways that reverse the natural hydro period to the detriment of native plants and animals.

**Response**

We appreciate these comments and believe that the issues raised are adequately described in the Department's analysis.

**Comment**

Benson Lake is the thermometer for this hot topic. Over grown weed beds choke a once pristine environment, resulted from more famine than feast.

**Response**

To address this issue, we hereby amend page 56 of the EA as follows. *"With a small lake/ river system such as Benson Lake, there are many factors that may influence the species and densities of aquatic plants. Lower water levels during the start of the growing season during the Chain refill period could lead to more emergent plants becoming established along the shorelines."*

**Comment**

Of special concern is the widely fluctuating level of water in the river which is negative to wildlife as well as aesthetics.

**Response**

The aesthetic impacts both upstream and downstream of the dam during low water conditions were not addressed in the EA. We hereby amend page 62 of the analysis as follows. *"During low water conditions, there are negative aesthetic impacts on the Chain of Lakes caused by visible dewatered lakebed and wetland areas. There are similar negative aesthetic impacts downstream of the dam caused by dewatered wetland, backwater, and oxbow areas as well as increased visibility of reddish colored iron precipitate that builds up and becomes visible in many of the oxbow areas."*

d. Wetlands

**Comment**

Figures 18 & 19 show herbaceous meadow species on the wettest sites immediately adjacent to the stream. Shrubs occupy the next ecologic site up on a gradient from wet to dry. That pattern is standard virtually everywhere I've been, and I've taught riparian ecological site courses in the field in 13 States. My observation is that the riparian vegetation on a system is affected by water forces, gradient, confinement and human influences such as grazing that alter plant succession. In the case of the Rest Lake Dam, only the water forces have been altered, and the hydrograph (Figure 30 in comparison to Figure 11) shows higher peak flows compared with the natural system, albeit at different times of the year. Regardless, these peak flows should be maintaining and creating oxbows and backwater sloughs. These are the product of peak flow induced channel morphology which does not care what season peak flows occur. The DNR cannot reasonably argue that the dam operation is eliminating these overflow channels. They are present, and the DNR has presented a hydrograph that would produce them. The DNR appears to be arguing the issues associated with a flood

control irrigation dam where peak flows are precluded. Having floated the river between Rest Lake and the Flambeau Flowage many times, I feel confident that the vegetation is controlled by gradient in that system. Limited riparian vegetation occurs along the upper reaches with higher gradient and greater confinement. Sedge meadows occur in the low gradient, low confinement reaches near Highway 47. The Figure 30 hydrograph shows existing flows resemble a natural pattern in June through mid-September - the period where the influence of available water would most likely affect soil moisture in the growing seasons - and therefore species composition in these lowlands.

On page 70 the DNR states that it has been determined that a flow of 200 CFS or higher is needed to flood the entire study area and allow for a natural flood pulse in the associated riparian wetlands. In northern Wisconsin rivers, these high spring flows generally begin in March or early April and slowly subside over time into mid to late June. Again, the hydrograph (figure 30) shows that the flows of 200 CFS or higher necessary to create oxbows are present, and that the flows in late June are approximately natural. The DNR's argument fails. In figure 43 the DNR shows a photo of wonderful oxbow formation, the product of the last 70 years of the current management, and then tries to argue that continuing this management will eliminate the oxbows. Figures 44 & 45 appear to demonstrate that there is less water depth in the River and the channel tends to be less full when there is less water in the River.

### **Response**

There is nothing in the analysis to indicate that oxbows downstream of the dam are disappearing. The formation of oxbows is a stream morphological process that is closely tied to annual peak flows. These peak flows occur with the current operation of the dam but occur in the fall as opposed to the spring as occurs on natural flowing rivers. The impact to these oxbows that is described in the analysis is centered on the fact that these areas are frequently dewatered, often at the start of the growing season, when these areas provide important habitat for a wide variety of fish and wildlife species. The floodplain and vegetation characteristics along different sections of the Manitowish River are also described in the EA.

### **Comment**

Page 25: The EA states, *"Historic aerial photos and observations made by local people that are familiar with the river suggest that over the last 50 or 60 years, the wetland plant community downstream of the dam has gradually changed from a wetland dominated almost entirely by wet meadows to a wetland dominated with scrub/shrub species in many areas."* With this statement WDNR is implying that the cause of increased shrub densities is the change in water regime. Invasion of shrubs into sedge meadows is a problem statewide, even in wetlands that do have not experienced water level changes.

When the DNR says on page 56 that, it is likely that over time, the wetlands along the river changed from being dominated by meadow species (sedges, grasses, forbs) to having a much higher density of shrubs (such as tag alder and willow), does the DNR suggest that this system has not fallen into dynamic equilibrium of the last 70 years and is still undergoing major change pursuant to the dam construction? That assumption warrants documentation.

### **Response**

The dominant wetland shrub species is described on page 25 of the analysis. To provide additional information regarding the impact of the dam operations downstream of the dam, we hereby amend the EA to include the following. *"The native shrub species found along the river corridor do not have the biological characteristics of rapidly spreading invasive species like glossy buckthorn. The historical observations, the hydrological needs of different wetland plant communities, and the high frequency of draining the riparian wetlands all support the finding that the operation of the dam has affected the wetland plant communities."*

The changes to the riparian wetland community and the disruptive dewatering of instream and riparian wetland habitat are both linked to the current operation of the dam, but they are distinctly different issues. As described in the Department's analysis, field studies have documented that passing drought like conditions on the river dewater the aquatic habitat for the fish, aquatic insects, and many other species

described in the EA. Regardless of the length of current operations, these organisms are not able to adapt to the dewatering of the aquatic habitat areas on which they depend.

**Comment**

Page 67, second paragraph: The EA states, “*The target flows identified in this alternative were based on field studies conducted in important types of habitat downstream of the dam. These studies are described in greater detail in the anticipated impacts section below.*” Below this statement the EA reviews a study by the USGS that estimates the natural flow regime for the Manitowish River if the Rest Dam was not in place. The target flows recommended by WDNR are based on frequency of natural flow, not habitat requirements of the downstream aquatic resource. It is our opinion that flow regime should be based on habitat needs using habitat suitability models and not simply on restoring natural hydrology. We feel this would provide better and ecologically-based science to support the decision making process.

**Response**

The target flows were based on the surface water needed in important habitat types as determined through the field studies that are described on page 70 – 74 of the analysis. By mimicking a more natural hydrograph, appropriate habitat availability for a variety of fish and wildlife species at different stages of their life cycle is addressed.

**Comment**

Page 70, last paragraph: The EA states, “*Through this study, it has been determined that a flow of 200 cfs or higher is needed to flood the entire study area and allow for a natural flood pulse in the associated riparian wetlands.*” This statement assumes that the flooding of the entire floodplain valley is necessary for wetland health and that the valley should be flooded every year. Natural wetlands experience a variety of flows from floods to droughts. It’s this variability of flow that helps different species stay healthy. One option would be to do a soil survey of the valley and determine what plants communities historically inhabited each reach. This would require a soil scientist that specializes in wetland soil formation. Using the habitat requirements of the desired vegetation would be a better method to determine the depth, frequency and duration of flooding during different times of the year than just flooding the valley every year.

**Response**

We agree that spring flooding of riparian wetlands may not occur every year. The USGS analysis provides very thorough science to better quantify the natural flow pattern of the Manitowish River system to help estimate the natural frequency of flooding in these wetland areas. Additionally, as described in the analysis, field study conducted by DNR staff links the flows identified in the USGS analysis with the surface water hydrology in important wetland habitat types. Together, these two pieces of information show that flooding of the entire riparian wetland valley is expected to occur most years during the start of the growing season. Additionally, conversations with USDA Natural Resources Conservation Service staff, who have studied the soils downstream of the dam, also support the conclusion that current operations of the dam have had an effect on downstream wetlands.

e. Invasives

**Comment**

The Manitowish River below the Rest Lake Dam has had a known infestation of purple loosestrife, an invasive wetland plant. The Turtle Flambeau Flowage-Trude Lake Property Owners Association, the WDNR, and the Iron County Land and Water Conservation Department have been collaborating on monitoring and treatment efforts of this plant for over 15 years. During the time, there have been a few attempts to introduce the *Galerucella* beetle. The beetle specifically feeds on purple loosestrife. This form of bio-control has been quite successful across the state. However, on the Manitowish River the beetle population has never seemed to get established well enough to control the loosestrife population. In late summer, the beetle seeks shelter in wetland leaf duff or surrounding uplands. It is a good possibility that the

beetles once in hibernation, are getting flooded out as the water levels rise in late fall to flood wetlands along the Manitowish River.

**Response**

The current high flows in the fall may be a factor in the establishment of *Galerucella* beetle populations, but not enough is known to be able to provide a reasonable amount of evidence linking low beetle numbers to current or alternative operations of the Rest Lake Dam.

f. Water quality

**Comment**

One individual expressed concern with low oxygen levels, and poor water quality below Rest Lake vs. above the lake Chain. Above the Chain, the water is very clear, has very little algae, and has a lot of minnows. Below the Chain, there is a thick coat of algae over every rock and log, there are few minnows, and the water is relatively murky. This is probably due to nitrates in the water because of fertilizer use, or septic tanks along the Manitowish Waters Chain, and nitrates/algae are associated with low oxygen levels after algae blooms. It is dangerous to have low water levels in the Chain at the same time when oxygen levels are low, especially in the summer. Sturgeon live at the bottom of Benson all summer, and low oxygen levels at significant depths, could harm sturgeon and hurt the species.

I think controlled studies should be done on oxygen levels below the dam during normal operation vs. when more water is released, and to see how long this effect persists.

**Response**

Low oxygen levels are not expected in the River below the dam due to the type, location, and depth of the flow gates on the Rest Lake Dam. In addition, downstream water quality monitoring has not indicated low oxygen levels in the River. As described in the EA, many water quality parameters of the Manitowish River and lakes are considered good, however, the nutrient loading and associated problems on Benson Lake have not been extensively studied. Since the water quality factors are not closely linked to the operation of the Rest Lake dam, these issues were not evaluated in detail as part of the environmental analysis.

g. Navigation

**Comments**

This summer I took a kayak down the river and my husband took the canoe. With current operations there were areas that he had to get out and push the canoe to an open spot.

The river is so beautiful and with current operations there are times it is hardly navigable.

**Response**

Thank you for providing these comments. The navigational issues that are associated with current operations are addressed on page 66 of the analysis.

#### 4. Cultural Resources

**Comment**

It was suggested that the EA cultural resources include a description of the medicinal uses of the plant species surveyed upstream and downstream of the dam.

**Response**

We agree that this would be a useful addition to improve the accuracy of the analysis and hereby amend the EA to include the following table and text on page 42. *“In addition to wild rice, there are a number of other wetland plant species that have been found above and below the dam that provide traditional medicinal and other important uses. A summary of the uses associated with these plant species is summarized in the table below and the information was derived from the following reference. Meeker, James E., Joan E. Elias, and John A. Heim. (1993) Plants used by the Great Lakes Ojibwa. Odanah, WI: Great Lakes Indian Fish and Wildlife Commission”.*

<b><u>Common Name</u></b>	<b><u>Scientific Name</u></b>	<b><u>Cultural Uses</u></b>
American elm	Ulmus americana	Medicinal use of bark
Arrowhead	Sagittaria sp.	Medicinal uses and use as food source
Balsam fir	Abies balsamea	Medicinal Uses, Hair Ointment, Wash, Use in Sweatbath Ceremony
Black willow	Salix nigra	Medicinal uses, basketmaking
Broad Leaved Cattail	Typha latifolia	Food in early growth stage, fuzz used in war medicine
Green ash	Fraxinus pennsylvanica	Inner bark used in compound tonic
Hard Stem Bulrush	Schoenoplectus acutus	Likely has similar uses to softstem bulrush
Leatherleaf	Chamaedaphne calyculata	Used fresh and dried leaves in beverages.
Meadowsweet	Spiraea alba	Medicinal uses
Pickering weed	Pontederia cordata	Fishing aid to help locate pike
River birch	Betula nigra	Medicinal use of bark
Rush	Juncus sp.	Likely similar to spike rush
Silver maple	Acer saccharinum	Medicinal use of bark
Soft Stem Bulrush	Schoenoplectus tabernaemontani	Matmaking and Toys
Spatterdock	Nuphar variegata	Medicinal use of root powder, tubers and seeds used for food
Spike rush	Juncus effusus	Material for weaving mats, bags, etc.
Sweet gale	Myrica gale	Tea making, seasoning for meat
Tag alder	Alnus incana	Medicinal uses of different parts, bark used to make dyes.
Water horsetail	Equisetum sp.	Tea used medicinally
Water smartweed	Polygonum amphibium	Medicinal uses
White birch	Betula papyrifera	Medicinal use of bark, bark also used to make baskets and canoes
White pine	Pinus strobus	Medicinal uses of bark, pitch, and needles, Misc. uses of bark and cones
White water lily	Nymphaea odorata	Leaves, flowers, and tubers used as food, medicinal use of pulverized roots
Willow	Salix sp.	Medicinal uses, basket weaving

**Comment**

Suggest modification to the section of the EA entitled “*Cultural Environment, b. Social/Economic (including ethnic and cultural groups) page 41. Natural Resources in the Ceded Territory*”. *“The Manitowish River system is located in the ceded territory of the Lake Superior Chippewa, where tribal hunting, fishing, and gathering rights are accorded as a matter of federal treaty. Prior to the arrival of Europeans in North America, Indian tribes have been functioning as independent, sovereign nations. Although the Chippewa ceded lands in the northern one-third of Wisconsin to the United States government in the Treaties of 1837 and 1842, they retained their off-reservation rights to hunt, fish, and gather within the ceded territories. As a result, the Lake Superior Chippewa tribes of Wisconsin may legally harvest walleyes and muskellunge using traditional methods, including spearing and gillnetting on designated waters in the ceded territory. A result of the proximity, the Lac du Flambeau Band of Lake Superior Chippewa Indians is the tribe that primarily utilizes the Manitowish system. The Lac du Flambeau Reservation has been a permanent settlement since 1745 when Chief Keeshkemun (Sharpened Stone) led his band to the Manitowish River area for wild rice, fish, and game. The Lac du Flambeau Reservation is located 12 miles northwest of Woodruff and Minocqua in southwestern Vilas County and the southeastern portion of adjacent Iron County.”*

**Response**

We hereby amend the environmental analysis on page 41 to reflect the information provided in the comment above.

**Comment**

On page 41 and 42, and then again on page 61 the DNR attempts to argue that the dam operation is adversely affecting wild rice. The DNR estimates that 92 acres currently exist in Rice and Papoose Creeks. When I was 15 those figures would have been near 0. In an effort to create duck hunting opportunities, Johnny McElrone (my high school employer and owner of the old Texaco station at the junction of K and W and Art Laha (former owner of the Bear Bar on County W) planted wild rice plugs in Papoose Creek in the early 1970s. I make this point not to suggest that their action is the source of the current stand. Rather I suggest that they were planting these plugs because there was no notable stand of wild rice at that time. No one would consider planting wild rice there now. Wild rice is rapidly filling the available habitat. Granted there was lowland habitat lost when the dam was originally put in operation, but there is virtually no question that the current acreage came from near 0 in the last 40 years. If wild rice is the objective, the current dam operation is a success story. It is interesting to note the DNR specifies on page 41 that, if water levels decrease, then the stalk can collapse. It is the DNR that is proposing to put these plants in jeopardy with its required mid-summer draw down.

**Response**

We agree. There are established wild rice beds under current operations and the approximate acreage of these areas are described in the EA. The narrative on page 41, 42, and 61 of the analysis describes the current fluctuation of water levels during the floating leaf period (which may occur between May and June depending on the season) and that this may be detrimental to wild rice productivity. A required mid-summer drawdown is not described or considered in the range of alternatives that are outlined in the analysis.

**Comment**

The comment was made that it would be helpful to include the reference to the extent and timing of water level fluctuations at locations of wild rice bed under both current and proposed alternatives. Trying to get more accurate mapping of the location of the wild rice beds would likely help trying to determine the extent of current and proposed water fluctuations. Rice stands farther up the river arms, for example, may have less fluctuation compared to rice on the lake margins.

**Response**

The description of the wild rice beds on page 42 of the Department's analysis described the acreage of rice beds on Island, Wild Rice, and Rest Lakes at peak years. To provide more detailed information regarding the location of the wild rice beds, we hereby amend the EA as follows. *"On Island Lake, the wild rice beds occur on the southeast portion of the lake where the Manitowish River enters and on the northeast end where Rice Creek enters. There are two primary rice beds on Rest Lake, one the northeast part of the lake where Papoose Creek enters, and the other on the northwest bay of the lake. On Wild Rice Lake, the best rice beds are found in the vicinity of the Trout River inlet and outlet. Little if any rice is known to exist on other parts of the lake. Rice is also found on many section of the Trout River above Wild Rice Lake, between Wild Rice and Alder Lakes, and between Alder and Manitowish Lakes. The exact locations of the smaller beds are not well documented but this system appears to hold rice in most areas with suitable habitat. Many of the best beds are within the Lac du Flambeau Reservation, and are protected and managed by the tribe. Due to the low gradient lake and river systems, the annual 3.5 foot water level fluctuations that occur with the current operation of the Rest Lake Dam would be mimicked in these areas with wild rice that are within the affected area described on page 11 of the EA."*

**Comment**

Rice productivity is influenced by many factors, and it is very difficult to predict the impacts of current or alternative operations on rice. Additionally, wild rice is adapted to disturbance. The disturbance caused by the current drawdown could be a benefit to rice. Periodic drawdowns can also prevent establishment of perennial aquatic plants that could outcompete wild rice. The current potential for rising water levels during the floating leaf stage, however, can also negatively impact rice. This complexity should be clearly articulated in the EA and used to explain the importance of future monitoring and for provisions to be written into any new order to allow for periodic drawdowns for aquatic plant management.

**Response**

The complexity of predicting the response of wild rice to a reduced or eliminated winter drawdown and the importance of future monitoring to evaluate any potential changes is described on page 75 of the analysis. We hereby amend the first paragraph on page 75 of the EA to clarify potential options for the management of wild rice and other aquatic plants that could be considered with a new order. *“A new operating order could have provisions included that would allow for periodic winter drawdowns if necessary for wild rice. The need for drawdowns would be based on monitoring data and would occur after consultation between the owner of the dam, DNR, and Tribal natural resources staff.”*

**Comment**

The paragraph under “Natural Resources in the Ceded Territory” gives the impression that only Native Americans are allowed to harvest wild rice. Same is true with the second sentence (as follows) under the Wild Rice section. *“Wild rice (Zizania palustris), or manoomin, has tremendous value both culturally and ecologically. Manoomin directed the Anishinabe to northern Wisconsin in their quest to find the place where the ‘food grows on the water’. Today, larger rice beds are present above and below the dam on the Manitowish River system. In addition to being an important traditional food source, wild rice beds also provide an important food source for waterfowl during fall migrations, good cover for brood rearing habitat for ducks, nursery areas for young fish and amphibians, and a food source for a number of bird species and herbivores such as muskrats.”*

**Response**

We hereby amend the Department’s analysis to reflect the language outlined in the comment above.

**Comment**

Tribal natural resources staff that have evaluated the wild rice on the river suggest the following edit on page 42, second paragraph. Delete the entire last sentence *“The wild rice on the river is an important food source for waterfowl but is not commonly harvested because the rice on the river is a shorter growing variety that is difficult to harvest in canoes”*

**Response**

We hereby amend the analysis to reflect the changes suggested in the comment above.

**5. USGS study****Comment**

The winter base flow described on page 14 of the analysis includes base flow from the watershed up-gradient of the Chain of Lakes. It includes more than just groundwater discharge directly to the reservoir, which was estimated in the report. The sentences seem to incorporate additional flow that would be expected for direct ground water discharge, as described in the first 2 sentences of this paragraph.

**Response**

To improve the accuracy of this section of the EA, we hereby amend the analysis as follows. *“The extent of spring and other ground water inputs to the base flow of the Manitowish River system upstream of the Rest Lake Dam can be roughly estimated by looking at the winter base flow over the dam when there are no changes to water elevations on the Chain.”*

**Comment**

On Page 17 there is a statement that *“evaporation loss and groundwater inputs were estimated by USGS to essentially cancel each other out resulting in no net water loss or gain as part of their analysis”*. That’s not correct. This appears to be a misinterpretation. The water budget method (not the adjusted drainage area ratio method) described how evaporation and ground water were ultimately “cancelled out” (by re-writing equations)

for the final calculation of natural inflow at the dam, but the report did not indicate that evaporation and ground water values were equal.

#### **Response**

To address this comment, we hereby delete the statement referenced above and amend the EA to reflect the following; *“evaporation loss and groundwater inputs on an average monthly basis were estimated by USGS and these aspects of the water budget and drainage area methods are described in detail in the USGS report found in Appendix II.”*

#### **Comments**

I purchased this land because we use the Chain daily, weather permitting, from May to mid-October. The article in the Lakeland Times dated 10/5/12 stated the USGS had only two years of flow analysis, and quote stated "they'd feel more comfortable with data if they could have done 25 more years of monitoring" -- let's do it.

With regard to the raw stream flow data presented in the purpose and need section for no apparent purpose, we all recall the summer of 2007 when the DNR was requiring outflows of 50 cfs from the Chain, with no data whatsoever regarding inflows. Now it appears that the DNR is content to present 2 years of raw data in the purpose and need section of the document without a clear link to the proposed action. The relationship between this raw data and the hydrograph on page 50 is unclear.

#### **Response**

The hydrograph on page 50 of the EA was based on more than two years of monitoring data. As described in the USGS report, the estimation of natural historical flows was based on two years of gaging upstream of the Manitowish Chain of Lakes and from two nearby long term gaging stations (with a flow record from 1991 – 2011). Additionally, after calibration of the water budget model, the model was used to compute natural flow at the dam from 1973 to 2011 using historical data for lake stage and discharge values provided by the dam operator. For a more detailed description on the methods used to estimate inflows, please refer to the USGS report found in Appendix II of the EA. Gaging water flows could be considered as a component of a new operating order.

#### **Comment**

The purpose of the USGS work was only to estimate natural flow at the outlet of the system. USGS was not asked by WDNR to do any work related to current or future water levels on the system under various flow regimes. However to check the applicability of the USGS numbers I did a comparison of their results with the flows measured by Xcel Energy at the Rest Lake Dam. When we compare the flow measured at the dam versus the estimated natural flows by the adjusted drainage-area ratio method and water budget methods they do not match well (see Figure 1). The adjusted drainage-area ratio method has a R2 of 0.35, and water budget method has a R2 of 0.58. A R2 value of 1.0 will indicate a perfect fit and value of 0.5 indicates that the relationship only explains for 50% of the variance. That these two data sets do not match is not surprising as actual water flows are artificially influenced by the operation of the dam.

#### **Response**

We agree. If the flows reported by CFIC were representative of the natural inflows to the dam, there would not have been a need for the USGS study. As described on page 14 of the USGS analysis, neither the drainage area nor water budget method can be directly evaluated against daily dam outflows because dam operation alters the natural flow pattern. The monthly error estimates for the water-budget and adjusted drainage area methods compared to measured streamflows are shown on page 16 of the USGS report. The USGS work makes it possible to evaluate expected Chain water levels with alternative operations by using inflow data, the monthly flow duration estimates, and the known volume of the Rest Lake Reservoir.

### Comments

If we remove the months of May and October from the data set and re-plot natural flows by the water budget method versus measured flow at the Rest Lake Dam we see a much better relationship with an  $R^2$  of 0.83. Figure 2 illustrates two conclusions: 1. With the exception of May and October when artificial opening and closing of the Rest Lake Dam influences flows, the USGS water budget method matches well with the measured data. This is not surprising since the water budget method was calibrated to the measured flow and lake stage data. 2. With the exception of May and October, Xcel Energy is currently operating the dam in such a manner as to pass through close to natural flow conditions. The Environmental Assessment (EA) prepared by the Wisconsin Department of Natural Resources and dated September 11, 2012 states, “*When water levels drop below 8’ 4”, flows over the dam are quickly reduced to minimum flows.*” The EA implies that during extended periods of the summer the minimum flow of 40 cfs is routine. A review of the data provided by Xcel Energy, and used in the USGS’s analysis (Figure 2), illustrates that during most years this drop to 40 cfs does not take place. Mean monthly flows approaching 40 cfs have only occurred in August and September of 1976 and 2005, two severe drought years.

Page 7, first paragraph: The EA states, “*When water levels drop below 8’ 4”, flows over the dam are quickly reduced to minimum flows.*” This entire paragraph and this sentence imply that during the summer season the minimum flow of 40 cfs is routine. However, a review of the data provided by Xcel Energy on historic discharges from December 1973 through November 2011, illustrated in the following figure, show that during most years this drop to 40 cfs does not take place. Of the record of 13,879 days of flows, on only 108 days did flows drop below 40 cfs (0.078% of the time). Fifty six of those days (52%) were in the drought of 1976 and 48 (44%) were during the drought of 2005. The data does not support this accusation.

The EA appears to be based on the premise that Xcel Energy is unnecessarily holding back water and routinely discharging at the minimum flow required by the current dam order. However, our analysis of the discharge data does not support this claim and in fact during most months and years since 1973, Xcel is discharging water near the natural flow regime as established by the USGS study used in the EA to determine natural flows.

The DNR suggests Xcel has routinely reduced flows far below the minimum cfs required under the Q7, 10 calculation noted above. But the data dating back to 1973 refutes the DNR's claim. Indeed, the available data shows that, out of 13,879 days of recorded flows, the flows dropped below 40cfs on only 108 days overall (0.078% of the time). ERP Letter Report, Paragraph 2. Out of those 108 days, 104 days occurred in the droughts of 1976 (56 days) and 2005 (48 days). Id. Thus, with the exception of the two most severe droughts of memory, flows have been reduced below 40 cfs on just **4 days** out of 13,879 days (or 0.028%) of the time). Thus, the data belies the DNR's conclusion that minimum flows of 40 cfs are routine in the summer months.

### Response

The comments above do not provide an accurate reflection of the water level and flow management that occurs with the current operation of the dam. It is important to consider that the Q7-10 required minimum flow was 50 cfs for many years prior to 2007 and has not recently been less than 40 cfs. Therefore, the evaluation of discharge records from 1973 to 2011 that only look at flows below 40 cfs does not reflect the frequency that flows were reduced to the minimum required flow at the time. Additionally, there are a number of issues with the accuracy of the water budget method for low flow conditions that are described on page 18 of the USGS report.

As stated in the analysis, the operation of the dam discharges the minimum required flow downstream every spring to refill the Chain starting in mid to late April. On average, the minimum flow is passed until the Chain is filled in late May or early June. These minimum flows are passed during the summer months in many years as well and can be seen when evaluating each separate year of discharge records reported by the dam operator. As shown on table 6 of the USGS analysis, river flows below 40-50cfs are only expected to occur very infrequently (not on an annual basis) whether using the water budget or adjusted drainage area method.

**Comment**

There are inadequate water supplies to maintain reservoir and discharge requirements through the summer/early fall seasons during dry summers. Current USGS water quantity calculations assume that all water entering the reservoir would be available for use in the reservoir and downstream rivers. These calculations, however, have not taken into consideration the losses occurring from farming operations, lawn irrigation and evaporation (4-6" per summer month).

**Response**

As described in the USGS report, losses occurring from farming operations and private use (such as lawn irrigation) are not known and were not part of their analysis. Natural evaporation, however was a factor estimated in their calculation of the flows reaching the Rest Lake Dam.

**6. Dam Operation****a. Current operating order compliance****Comment**

CFIC disagrees with the WDNR's assertions that the Rest Lake dam was operated out of compliance. Furthermore, CFIC strongly recommends the WDNR remove any language from the draft EA that implies, asserts, or characterizes the Rest Lake dam was operated out of compliance with the Last Orders.

**Response**

We disagree and believe it is clear that certain provisions of the current operating order are not being followed by CFIC.

**Comment**

Page 52, second paragraph: The EA states that, "*With current operations, spring refill does not begin until ice is 75% off of Rest Lake to avoid potential ice damage to permanent piers and boat houses. On average, refill begins on April 20th which is often after most of the high spring runoff events have passed through the dam.*" The first question is over what period is this average calculated? Recent climatic data and modeling done by the Wisconsin Initiative on Climate Change Impacts (WICCI) and Center for Climatic Research at the University of Wisconsin-Madison have indicated that spring temperatures are increasing due to global climatic change. John Magnuson, an aquatic ecologist and limnologist at the University of Wisconsin-Madison Center for Limnology, has predicted earlier ice off for lakes in the upper mid-west. Climate change may result in changes as to when the spring re-fill will happen at Rest Lake and this likely effect should be discussed in the EA.

**Response**

The period over which the April 20<sup>th</sup> date was calculated was 1973 to 2008. Because of the uncertainty in predicting the effect that climate change could have on the range of alternatives discussed in the analysis, this information would not improve the clarity, accuracy, or scope of the EA.

**Comment**

The EA exaggerates the degree to which Xcel Energy has departed from the existing order and the "natural flow regime." In making the claim that the existing order should be modified, the EA asserts that Xcel Energy is routinely holding back water in violation of the existing order and discharging only the minimum flow required by the DNR. In almost every respect, however, that is simply not true. First, the EA suggests Xcel violated the order by maintaining summer water levels in a narrow range between 8'4" and 8'6" in the summer months. However, the existing order does not require water levels to fall anywhere below 8'6" in the summer. Instead, the order gives Xcel the discretion to maintain water levels anywhere between 7'3" and 8'6". If Xcel wants to keep water levels at 8'6" all summer long, there is nothing in the order to prohibit that. (Indeed, maintaining a high water level would appear to be precisely in line with Xcel's interests, since Xcel

values the Chain as a reservoir for downstream power generation). Second, the EA suggests Xcel violated the order by delaying the drawdown until after the Colorama festival occurs. However, the existing order does not require a drawdown to start on September 1 or any other time. Instead, the order gives Xcel the discretion to initiate a drawdown any time between September 1 and the time the ice sheet forms in the early winter, subject only to the limit that Xcel cannot lower the water at a rate of more than 2 inches per day. Because the order does not require any drawdown at any time, the DNR cannot claim Xcel has violated the order by "delaying" the drawdown to later in the Fall. For these reasons, Xcel has followed the existing order in virtually every respect, with the only exception being that the Chain has not always reached the 7'3" minimum by April 15 of each year. The DNR should revise the EA so that "deviations" from the order are not exaggerated and the public can make an informed decision about whether operating under the current order would be better than operating under the DNR's proposed alternatives.

### **Response**

Page 7 includes a summary of the differences between the 1939 order and current operations. The summary includes one aspect of current operation that clearly does not follow the requirements of the 1939 order: the refill of the Chain to 7' 3" by April 15<sup>th</sup>. The summary also describes aspects of the order that are not followed that provided evidence to show that the use of the dam has changed over time and is currently focused on accommodating a narrow range of water interests on the Chain of Lakes. One example includes the current July water level range between 8'4" and 8'6" compared to the 7'3" to 8' 6" that is allowed in the order. To improve the accuracy of the description of summer water levels, we hereby amend the following sentence on page 7 as follows. *"During the summer months reservoir storage is not used to augment low flows downstream as shown by the fact that water levels on the Chain are currently maintained in a narrow range of 8' 4" - 8' 6" and not between 7' 3" - 8' 6" as allowed in the 1939 order."*

With this minor change, we believe the EA accurately describes how dam operations have changed as the purpose of dam operations has changed from hydropower and downstream flow augmentation to its current use primarily as a recreational reservoir. At this time, no enforcement actions have been initiated, and the EA does not make any judgment with regards to specific legal requirements or use the term violation.

#### **b. Water level elevation**

### **Comment**

On Page 11 the EA states that the, *"The current maximum water elevation upstream of the dam is measured as 8' 6" on a gage at the Rest Lake Dam which corresponds to an elevation of 1601.0 NGVD (National Geodetic Vertical Datum)."* The USGS report, *Estimation of Natural Historical Flows for the Manitowish River near Manitowish Waters, Wisconsin*, states that the maximum stage is *"1,601.4 ft above NAVD 88"*. Which value is correct?

### **Response**

NGVD and NAVD refer to different geodetic datums that are used for calculating the coordinates of points on the Earth. Whatever datum is applied is tied to the 8' 6" water level elevation at the Rest Lake Dam. In terms of managing the water elevations at the dam, there hasn't been any need to differentiate between the two datum sources. NGVD is the datum identified on the USGS topographic maps of the Manitowish Waters area and is the datum described on page 11 of the analysis. It is also our understanding that 1601.0 NGVD is what is used by CFIC. NAVD 88 is currently the standard geodetic datum used for work conducted by federal agencies. More information on geodetic datums can be found on the following website: <http://www.ngs.noaa.gov/faq.shtml#WhyVD29VD88>

## c. Usefulness of the dam

**Comment**

The Federal Energy Regulatory Commission's assessment that the Rest Lake dam was, "... *neither used and useful nor necessary or appropriate to maintain or operate...*," solely for hydro power generation. The WDNR makes a similar statement to the perceived lack of value on page 76 of the draft EA. CFIC disagrees with this assertion. While its economic value might be small in comparison to the much larger Turtle-Flambeau dam located downstream, there is still value added from the 3.5 ft. annual fall drawdown and the 13,000 acre-feet of water that is released into the Turtle-Flambeau Flowage. This water refills the Turtle-Flambeau Flowage by approximately one-foot during the fall drawdown providing several downstream benefits. First, the additional water allows for an increase in electricity generation at downstream power plants. The increased electricity produced from this water is a qualifying renewable energy resource that can be used to satisfy the State's renewable energy portfolio standard, while at the same time avoiding emissions and other environmental impacts from fossil fuel fired generating plants. Second, the economic value of this enhanced hydropower generation helps pay for the operation and maintenance of the dam. Eliminating or reducing the depth of the drawdown will mean either no direct or decreased economic value to CFIC due to the lost revenue from the enhanced generation. Third, the same water that is used to generate electricity also contributes to the maintenance of the winter aquatic ecosystems on the downstream portions of the Flambeau and Chippewa Rivers and all the way to the Mississippi River. Fourth, some of the extra water from the fall drawdown helps maintain a higher winter reservoir level at the Turtle-Flambeau Flowage, which increases the likelihood of a near full reservoir by the fishing opener in early-May. All of these benefits should be identified in the EA and should be considered as part of the benefits to the continuation of the existing operating regime at the Rest Lake dam.

**Response**

These comments are addressed in the EA. The contribution of current management to downstream waterpower production (0.06%) is described on page 6 of the analysis, and the volume of water passed downstream (about 11 inches) to the Turtle Flambeau Flowage from the fall drawdown is described on page 17. The effect of alternative management of water levels and flows in terms of hydropower and the balance of water levels upstream and downstream of the Rest Lake Dam is described in the Alternatives and Environmental Consequences section of the EA. In addition, many of the environmental issues identified in the comments above such as water for navigation for the fishing opener are important not only for the Turtle Flambeau Flowage but also the Manitowish Chain. As described in the Department's analysis, this issue, as well as maintenance of aquatic resources above and below the dam, would be better accommodated with a more balanced management of water levels and flows at the Rest Lake Dam.

## d. Relationship between water levels and downstream flows

**Comment**

What is downstream flow if the upstream lakes are reduced 2" in a day and there is significant rain?

**Response**

As described on page 11 of the USGS report, a drawdown of the Chain 2" in one day is equivalent to 342 cubic feet per second of discharge. The downstream flow of a 2" drawdown during a rain event would depend on the size of the rain event. The graphs on page 19 of the USGS report show the downstream flows that have been passed in the fall during the drawdown in previous years.

**Comment**

What is a more reasonable control for inches/day and drop in upstream lake levels on a design basis?

**Response**

As described on page 67 of the analysis, changes in water levels or flows related to any refill or drawdown would be based on ramping rates to avoid quickly changing water levels and flows upstream or downstream of the dam. These rates would need to be written in a way that would also allow the operator of the dam to adjust to large storm events and avoid the flooding of property.

## e. Dam ownership

**Comments**

I do not believe that the relationship between Xcel Energy and the Chippewa and Flambeau Improvement Company is accurately described on page 1 of the EA.

The CFIC is composed of several entities including the Dairyland Power Cooperative, Flambeau River Papers LLC, and Xcel Energy. The Rest Lake Dam is owned by CFIC and not Xcel Energy. As a result, any reference to Xcel Energy in the draft EA should be replaced with CFIC.

**Response**

We hereby amend the analysis to replace any reference to Xcel Energy with the *Chippewa and Flambeau Improvement Company* or *CFIC*.

## f. Dam abandonment and future dam operations

**Comment**

CFIC is very concerned with changing operations at the Rest Lake dam. In addition to the potential loss of downstream ecosystem benefits, the loss of direct economic benefit could adversely impact the viability of the dam. With the loss of revenue from eliminating or reducing the fall drawdown, there will be reduced or no funds available to carry on operation and maintenance activities, which include dam inspections, safety related activities and operational and maintenance expenses. As a result, there is little incentive or justification for CFIC to continue ownership and operation of the dam. CFIC would prefer to continue its current operating regime and public outreach efforts to minimize operational costs, risk and safety concerns. If the WDNR is intent on adopting Alternative 3 or 4, CFIC would likely examine transfer of ownership of all assets related to the dam to the state, county, township or local cranberry association. Alternatively, if no viable alternative owner can be found, CFIC would likely follow the state-required process for dam abandonment and removal.

Alternative 3 - WDNR Public Interest Flow. This alternative is largely defined by a greatly reduced fall drawdown (7'6" to 8'0" level), an immediate refill to 8'6" in early spring, and maintenance of summer reservoir levels between 7'0" and 8'6" while maintaining a high flow discharge rate. Alternative 3 is undesirable to CFIC for the following reasons. Reducing the drawdown level from 3.5 ft. down to 0.5 ft. or 1.0 ft. would greatly reduce or eliminate the direct economic value of the dam. As stated earlier, while the direct economic benefit is relatively small, the revenue from the increased electric generation does help pay for the maintenance and operation of the dam. Adoption of this alternative would force CFIC to look at options for alternative ownership and operation of the dam.

Eliminating the fall drawdown would eliminate any economic benefit that CFIC receives from the Rest Lake dam. This alternative would force CFIC to look at options for future ownership and operation of the dam.

**Response**

We appreciate CFIC's perspective. The owner of the Rest Lake Dam has the right to pursue transfer of ownership or dam abandonment at any time. Based on this information, we hereby amend the fourth paragraph of the analysis on page 76 as follows. "*With any change to the winter drawdown levels, CFIC has*

*indicated that they would likely consider seeking new ownership of the dam. They have also indicated that they may apply for dam abandonment and removal if no qualified group is willing to take on the cost and liability of dam ownership."*

g. Q7-10

### **Comments**

Click on Frequently Asked Questions about the Flow Measurements hoping that some light will be shed on the mysterious Q7-10 calculation and you get the 2008 Flow Reporting Discrepancy document - that essentially says no one knows what the flow is. Now after two seasons of USGS data collection, the picture is apparently so clear and so supportive of the DNR decision, that further data collection is no longer necessary. If the DNR is going to continue referring to the Q7-10, then the DNR should explain what it means and stop leaning on the USGS. In the 12/20/2007 letter to the DNR, Rob Waschbush of the USGS makes the statement, "These values are the best estimates I could determine with the data available." A weaker endorsement could hardly be crafted, and the 2012 USGS Report Summary discusses the variation between the two flow calculation methods, but does not identify a definitive number. While the DNR says the USGS calculates the Q7-10 the USGS report puts it back on the DNR saying, the WDNR has considered the Q7-10 for the Rest Lake Dam to be 40 cubic feet per second (ft<sup>3</sup>/s) because this is the flow that the dam operator has used in documentation of dam operation. All along through my conversations with Tom Bashaw back in 2007, I was never connected with anyone from the DNR who could say what the Q7-10 is or means. I've put time into that. Yet there it is, still on the DNR website under the Frequently Asked Questions page 2, explaining why the DNR's new initiative is required under Wisconsin Statute - Section 31.34. The DNR seems desperate for an anchor point suitable for mooring this decision.

The EA suggests Xcel violated an implied condition of the order by failing to pass 40 cfs over the dam at all times. This suggestion is based entirely upon the DNR's interpretation of Wis. Stat. § 31.34. Under that statute, a dam operator is required to "pass at all times at least 25% of the natural low flow of water of such stream, except as otherwise provided by law." According to the DNR, "natural low flow" is calculated using the Q7-10 formula, with the most recent calculation having arrived at the 40 cfs figure. But the DNR's position is flawed in at least three respects: The statute does not define "natural low flow" with reference to the Q7-10 formula. That is just an interpretation the DNR has come up with on its own. The DNR's interpretation conflicts with the plain language of the statute since the DNR interprets a statute requiring a dam operator to pass 25% of the "natural low flow of water of such stream" to require the operator to pass more than 100% of the actual and existing flows over a dam in drought conditions. A more reasonable interpretation which avoids absurd results in drought conditions is that a dam operator must pass 25% of existing inflows over a dam at any time. Since there are at least two reasonable interpretations of the statute, and since the courts have not yet decided what the statute means, it is an exaggeration for the DNR to claim that Xcel has violated the law simply because it did not pass 40 cfs at all times. The statute says a dam operator must pass 25% of the natural low flow "except as otherwise provided by law." Here, the existing order has the force of law, and it does not require Xcel to pass 25% of the natural low flow. Thus, the order overrides the statutory requirement. Even if the Q7-10 calculation supplies the correct definition of "25% of the natural low flow," the DNR itself has calculated three different Q7-10 figures. In 1975, the DNR said 25% of the natural low flow was 25 cfs. In the summer of 2007, the DNR said it was 50 cfs. Then, months later, the USGS calculated that the Q7-10 figure is 40 cfs. The DNR can hardly be heard to claim that Xcel has violated the minimum flow requirement when the DNR has not been sure of what that requirement happens to be.

### **Response**

The analysis does not state that CFIC violated the law by not passing 40 cfs. We agree, the Q7-10 at the dam has not always been 40 cfs and other Q7-10 flows were followed in the past based on the best information available at the time. The authority for the Department of Natural Resources (DNR) to regulate dams, water levels and minimum flow discharges is contained in Chapter 31, Wisconsin Statutes. Section 31.02(1) of that

law states: “The department, in the interest of public rights in navigable waters or to promote safety and protect life, health and property may regulate and control the level and flow of water in all navigable waters.....” Section 31.34 requires that “Each person, firm or corporation maintaining a dam on any navigable stream shall pass at all times at least 25 percent of the natural low flow of water of such stream, except as otherwise provided by law.” In administering these statutes, the DNR has interpreted and applied statewide, since the early 1980s, that 25 percent of the natural low flow equals the Q7-10, which is the lowest average flow of a stream over seven consecutive days during a 10-year period. This number differs by stream and is developed using a statistical analysis of stream gauging performed over many years. The Q 7-10 flow is not 25 percent of the flow coming into the Chain. The DNR often works with the USGS to set the Q7-10 for rivers and dams. The USGS study represents the best available data and as described on page 20 of their report, the Q7-10 is equated with the annual FD 99.6 flow or 57 cfs for the Manitowish River below the Rest Lake Dam.

## 7. Alternatives

### a. Adaptive management

#### **Comment**

It is a recognizable challenge to balance competing interests on a managed river system. With time, additional data will be generated that allows the agency, dam owner and stakeholders to evaluate whether the prescribed flow order is meeting its goals and whether there are changes that need to be made. Any flow order issued for Rest Lake Dam should incorporate adaptive management and a commitment to revisit the order periodically (for example, every five years) to look at impacts to fisheries and aquatic habitat, sediment and erosion, ice damage to piers and access to the water in order to evaluate if changes need to be made to the flow regime. Such a process should include stakeholders beyond just the agency and Lake District.

#### **Response**

Adaptive management can be considered when a new operating order is issued.

### b. River dredging or construction of wing dams

#### **Comments**

Since an extremely small area of total lake area is drastically affected by the current winter draw down (primarily the oxbow areas shown in the DNR study) it may be more economical for the DNR to dredge these areas a small amount to maintain water in those areas. This cost will be far less than the loss of value to the lake-front homes. This solution would greatly reduce the environmental damage show the DNR study, and at the same time the properties would not be devaluated.

Work on downstream river issues by channel dredging and constructing wing dams.

#### **Response**

These suggested river modifications would not address the negative impacts associated with current operation of the dam. Additionally, due to the negative impacts and costs that would occur by attempting to dredge riparian wetlands or construct wing dams, these actions are not considered feasible alternatives to address the water level and flow issues that are identified in the environmental analysis.

## c. Gaging future levels and flows

**Comments**

From the EA, it appears that the flow gauges will be discontinued. This should not be allowed to happen. Lack of adequate monitoring and data collection is a major reason why it has taken close to a decade to make a science-based decision on a flow order. Discontinuing the gauges will make it nearly impossible to monitor whether the new flow order is being followed because information will no longer be available to the dam owner, the DNR or the public. 401 Water Quality Certifications issued by the DNR for federally-licensed dams almost always contain provisions for flow and lake elevation data collection and for making that information publicly available. This site should have the same requirements.

Operating costs for four USGS gages would be expensive (\$8,000 per gage times four gages = \$32,000/year).

Who will be responsible for the ongoing expenses of operating USGS monitoring stations, tracking data, making calculations and determining when and how to change outflow?

**Response**

The grant that funded the installation and annual operation costs for the USGS gaging had limited funds. The installation of water level and flow gages can be considered as a component of a new operating order. The owner of the dam would be responsible for funding any required gaging and the amount of gaging would be limited as much as possible. USGS has also developed methods to estimate the inflows to the Rest Lake Dam based on the inflows at regional USGS gages that could be used to help minimize potential gaging needs and associated costs.

## d. Other suggested alternatives

**Comments**

I was surprised and disappointed that there was no middle alternative. To me, that's a serious flaw in the EA and needs to be addressed.

In general, the EA attempts to build a strong biological case for changing the Operating Order from Option 1 or 2 to 3 or 4 because of harm to wildlife. We offer that 75 years of operating the MW Dam under either Option 1 or 2 has left us with very healthy and diverse wildlife populations and do not see the potential gain in healthy wildlife as legitimate reason for the drastic changes that Option 3 or 4 would bring. We think that more moderate solutions like slowing down the fall draw down and capturing more spring runoff even if there is still ice on the lakes will solve for the biological concerns, i.e. a modified or hybrid Option 1 or 2 will solve for these issues.

As an alternative, I strongly recommend that you consider altering the timing of the water level changes - begin raising the water level in the spring as soon as the ice goes out rather than on some specific date. Most years you will catch more of the spring runoff that way. Begin letting the water down earlier in the fall. Tourism won't be impacted much - the leaves will change for Colorama with or without the lakes being full. Study the impact of the changes for the next 10 years or so and then revisit whether further ones are necessary.

Why can't the DNR come to a compromise with the people on the M.W. Chain and instead of the 42 inch drop of water go 21 inches? My opinion this will prevent a lot of ice damage.

However a 5th alternative, a hybrid of these alternatives may exist, which would allow partial drawdown in the winter to protect shorelines, but would increase the minimum flow downstream on a scale that would

enhance downstream aquatic habitats. This additional alternative would be based on a HABSIM modeling of downstream river reaches and flow regime for the lake.

### **Response**

The analysis was intended to describe a broad range of alternatives and their associated impacts. There is nothing that ties the department to those specific alternatives. Any combination or modification of alternatives can be considered when a new order is drafted.

### **Comment**

What remains unclear - and will have a huge bearing on the final order - is how the agency will prioritize upstream (Chain of Lakes) interests versus downstream riverine interests at times of low flows. For example, a major difference between alternative III and IV is that Alternative III prioritizes a prescribed series of flow regimes recognizing they may impact lake levels, while Alternative IV focuses on lake levels but proposes a minimum downstream flow. This is further highlighted in the discussion in Alternative IV about passing “dam inflows” versus “gauged inflows” where the required minimum outflow will be determined after cranberry diversions (dam inflows) or regardless of cranberry diversions (gauged inflows). While these points may seem minor, they indeed reflect how the “devil is in the details” and can have a huge impact on the final flow order.

### **Response**

To provide more clarity regarding the differences between the Public Interest and Passing Inflow alternatives, we hereby amend the analysis to include the following narrative as part of the second paragraph on page 70. *“When water levels and flows conflict, the Public Interest and Passing Inflow alternatives are different in the way they rank meeting upstream (Chain of Lakes) vs. downstream (Manitowish River) public water interests. The Public Interest alternative, for example, recognizes that certain target flows may affect lake levels at times of low flows. Passing dam inflows, however, prioritizes lake levels and this is reflected in that fact that water usage from the cranberry and private water withdrawals would be taken solely from downstream flows and not from the Chain water levels. In Wisconsin, a common prioritization of protecting upstream vs. downstream public interest issues that has been implemented in operating orders when water levels and flows conflict has been as follows. 1) Consideration of fish and aquatic habitat below the dam. 2) Consideration of fish and aquatic habitat above the dam. 3) Consideration of recreation below the dam. 4) Consideration of recreation above the dam.”*

### **Comment**

Alternative IV - Passing Inflow (run of the river). This Alternative is intended to match water received from the upstream regions to outflows from the Rest Lake Dam. We see several significant problems in this Alternative: First, this option would only be acceptable to our members if the Memorandum of Understanding (MOU) between WI-DNR and CFIC (Xcel Energy) for the Turtle Flambeau Flowage (TFF) Dam is modified to “run of the river” status. Changing the Rest Lake Dam operation to “run of the river” mode without the same changes to downstream water flow agreements will have damaging impacts. For example, if the TFF Dam is required to continue discharging 300 cfs during a drought and the Rest Lake Dam has a very low outflow (due to very low inflows), low water conditions will develop very quickly on the TFF. Second, we believe it will be very difficult to publicly, politically, and legally justify switching to “run of the river” mode for only one part of the river and not the entire system. In this case, the rest of the system is governed by the Federal Energy Regulatory Commission (FERC). Modifying FERC license conditions at downstream facilities, including the recently licensed TFF Dam, to match operational changes at the Rest Lake Dam is very unlikely and would be very expensive.

### **Response**

Any changes to the operating order of the Rest Lake dam needs to consider the effects of those changes on the Turtle Flambeau Flowage. When compared to current operations, the public interest and passing inflow alternatives would pass more water downstream in the spring. When the Chain is full, current operations, the

1939 order, and the passing dam inflow alternatives would all pass a minimum required Q7-10 flow downstream to the Turtle Flambeau Flowage during severe drought conditions.

### **Comment**

Page 68, third paragraph: The EA states, *"If passing gaged inflows, measuring the inflow to the Rest Lake Chain upstream of the cranberry pumping locations would be needed (Figures 5 & 9), and the dam discharge would match the sum of the measured inflows."* A problem with this method is that it does not account for losses in the Rest Lake Chain. Losses such as evaporation during the summer can be significant. One inch of evaporation per day off the 4,392 acre Chain would result in 366 ac-ft/day or 185 cfs of loss. Between 0.5-inch and 1- inch of evaporation off a lake surface is not unusual during dry hot summer days. The calculation of volume of water to discharge downstream should be based on a detailed water budget, not simply on incoming flows.

"How" and "who" will calculate and measure inflow so there is a matching outflow? We envision lots of issues in measuring how much water comes "in" from what source, what comes from ground water, how much is lost to evaporation, how to account for water lost to cranberry operations, etc.

### **Response**

Inflows to the Rest Lake Dam can be estimated using models developed by USGS for the Rest Lake Chain that are based on regional USGS gages that are still in operation. USGS has incorporated natural evaporation loss and groundwater inputs to estimate the inflows reaching the dam as described on pages 10-13 of their report. With a new operating order, different variables such as natural evaporation loss or ground water inputs are factors that could be included when determining the flows to pass downstream of the dam. To provide more clarity regarding the water inputs and outputs that can be incorporated in a new order, we hereby amend the analysis on page 68 as follows. *"Water loss by natural evaporation and inputs from groundwater and precipitation could be factors that are incorporated in a new order when determining the flows that need to be passed downstream of the dam. USGS has estimated the long-term monthly averages for these aspects of the water budget as described on pages 10-13 of their report in Appendix II."*

### **Comment**

On page 67, the DNR makes the statement; Water levels on the Chain would be operated close to 8'6"but would occasionally need to be lowered in order to meet downstream flow needs. The downstream target flows would be reduced in low water conditions once the lakes reach a specified water level such as 7' 0". Once the Chain reaches that level, the owner of the dam would either need to consult with DNR to determine the required flow or a minimum flow would be specified in the order. I've made multiple references to the terms "occasionally" and "downstream flow needs" in my comments, because they are of critical importance, and stunningly vague in the context of this assessment and proposal. The two sentences in italics above give the DNR unlimited authority overrides the figures on Table 11 without notice or rationale. There is no specified criterion of any kind to guide the DNR's decision making process. Need to spin a turbine anywhere downstream? No problem. Draw the water from the Rest Lake Reservoir. That is a down stream flow need that could be part of a negotiated resolution to any issue any time. How often will the DNR do this? Occasionally. Is the DNR's proposal to keep the reservoir full in the winter to assure that the water is always available when a "downstream need" is identified? Maybe I'm just paranoid. But the question must be asked because the DNR has so blatantly failed to identify purpose and need for this action, and the environmental justification presented is so overstated. A midsummer drawdown of 16 inches will be standard, but that is certainly not the floor. Once the 7' level is reached the DNR will specify the flow - and it could be anything. In the introduction to Table 11 on page 68, the DNR tells us that it will require outflows to exceed run of river 30% of the time. Is this a re-designation of the Rest Lake Reservoir as a storage pool for some unstated purpose? It is really time for the DNR to tell the Chain property owners what this plan is, and who it is for. Who exactly is the "public" who's "interest" is being accommodated. The DNR needs to extend the comment period to allow Chain property owners the opportunity to grasp the potential magnitude of this proposal.

**Response**

To meet the spirit and intent of the environmental analysis process, no decisions can be made to choose a specific new operating order until the WEPA process is completed. This approach allows the Department to describe a range of feasible alternatives, consider their impacts, and receive public input in order to make an informed decision. Because of this, the alternatives in the EA were described in more general terms and did not outline specific dates, water levels, or flows. Additionally, a preferred alternative was not selected. Once the environmental analysis is complete, any new draft order would include specific dates as well as specific water level and flow information. Those levels and flows, along with the USGS analysis, would allow Department staff and the public to predict the frequency that certain flow events and water levels would be expected both upstream and downstream of the dam. When a new order is drafted, there will be options made available for public review and input.

## e. Feasibility of alternative operations

**Comments**

CFIC is very concerned about the liability of operating at full reservoir conditions (8'6") during the spring season. A heavy thunderstorm with several inches of rainfall would allow the reservoir to rise above the 8'6" level. This scenario is especially concerning prior to green-up where more water is made available to tributary streams and rivers.

Complying with a 'release equal inflow' requirement at all times would be impossible to meet. Calculating inflows on a continuous basis would be tedious work and require more effort (and cost) than the direct economic value. Current USGS water quantity calculations assume that all water entering the reservoir would be available for use in the reservoir and downstream river. These calculations, however, have not taken into consideration the losses occurring from farming operations, lawn irrigation and evaporation (4-6" per summer month). The gaged flows on inflowing tributary streams would be much greater than what is actually being observed at the dam.

Consulting with the DNR once the water elevation meets 7'0" would be problematic. And has a potential of causing inconsistent operation of the dam – the flows should be indicated in a comprehensive operating order.

Constantly changing the minimum flow requirement through the spring and summer seasons would be an administrative burden to both the WDNR and CFIC, or any dam owner. It is doubtful that WDNR and dam owner representatives would want to convene on a daily or weekly basis to determine an appropriate minimum flow.

It is difficult to comment on the implementation of prescriptive ramping rates when their size or duration is unknown at this time. Nevertheless, CFIC is concerned that implementation of prescriptive ramping rates would reduce operational flexibility and increase dam safety concerns due to a potential inability to make the necessary discharge changes in a timely fashion.

Basing an operating order based on the monthly flow-duration values for the Manitowish River provided by the USGS (Table 12) that would provide adequate target flows 70 % of the time, is most likely not sustainable.

Page 67, first paragraph: the EA states "*Once the Chain reaches that level, the owner of the dam would either need to consult with DNR to determine the required flow or a minimum flow would be specified in the order.*" Dam operation is a complex process of evaluation current water levels, predicted rainfall and downstream conditions. Requiring the dam operator to contact WDNR every time they need to open or close the gates would be a tedious process that could cause delays and potentially serious impacts to upstream or downstream properties. The daily operation of the dam needs to be in the hands of a trained operator based

on pre-described flow conditions. Dams operations cannot be handled by a committee, who could take days to weeks to assemble.

### **Response**

We agree. There are a number of operational issues involved with setting ramping rates, water level operating ranges, and consultation process that would need to be outlined with feasible means and methods. Page 76 of the analysis describes the level of complexity associated with the public interest and passing inflow alternatives in general terms. The owner of the dam would have the opportunity to comment on the feasibility of specific parts of a new operating order.

## **8. Economic impacts**

- a. Number and value of shoreline structures

### **Comments**

The information resulting from the 2004 survey and other observations on page 46 of the EA is suspect at best. I personally know three “dwellings” on Spider Lake alone as opposed to the ‘5 on the entire Chain’ as indicated by your review. As noted in the previous letter, the assessed value of our dwelling alone is \$70,000 and I find it unconscionable that your study and recommendations seem to belittle the dramatic damage to us and others. This is a serious matter and the economic impact to both individual residents and the entire community need to be given at least as much weight as the environmental matters!

One issue the DNR total ignored is economics. In my case, over the past 55 years of lake front ownership, I have invested \$40,000 in waters edge infrastructure (boathouse, pier, shorestations, etc.). The family has spent endless hours utilizing natural materials (logs, driftwood, plants, and rocks) to reinforce the shoreline against storms and high water.

We feel the EA does not adequately identify and address the potential impacts to riparian residents on the Chain. Our field surveys and examination of aerial photos indicate that the numbers of piers, boathouses and shoreline structures that will be impacted by the proposed action are underestimated in the EA.

Page 46, Table 8: A study by Ecological Research Partners, LLC has surveyed the structures on the entire Manitowish Waters Chain. The inventory has identified the following number of structures: Winter lake bed structures (piers, decks, and boat lifts) = 1,195. Wet boathouses = 126. Dry boathouses = 65. The estimates made by DNR in the EA significantly under counts the number of structures and boathouses.

Page 49 Section 10: The EA discusses that higher proposed water levels in the winter will require “*more piers would need to be taken out of the water in the fall. For structures that cannot be moved, it is likely that aeration systems, physical ice deflectors, or other methods would need to be installed to protect against possible ice damage.*” However, the EA does not discuss the cost of the recommended actions. On other lakes that don’t drawdown in the winter, residents have designed their shore structures to be easily removable. With the history of winter drawdown on the Manitowish Waters Chain most residents have taken advantage of the situation and designed their piers, boat lifts and shore stations to be permanently left out all winter. Many of these residents will have to completely replace their shore structures. Based on our analysis there are approximately 1,195 piers and associated structures on the bed of the Chain in the winter. Cost of a new pier can range from a few thousand dollars to tens of thousands of dollars depending on size and design. On the Manitowish Waters Chain this cost could range from \$2,500,000 to as much as \$20,000,000 depending on pier design. Cost of structure replacement should be included in the EA.

The EA does not adequately identify and quantify the positive and negative impacts of the proposed changes. The EA grossly understates and glosses over the nature and extent of property damage that will be caused by the DNR’s preferred alternative. Under these circumstances, and especially given that the DNR has a

statutory obligation to "protect property" when modifying operating orders for dams, it is unfathomable that the EA fails to quantify the nature and extent of the existing shoreline structures on the Chain, fails to acknowledge or quantify the damage that would be caused to those structures under the DNR's preferred alternative, and fails to estimate the costs that property owners on the Chain will be forced to incur to avoid that damage. To address this absolute void in the DNR's analysis, the Defense Fund commissioned a shoreline structure survey by ERP. Based upon its work to date, ERP has issued a preliminary report showing that: There are 1,226 parcels on the Chain. There are 1,022 permanent piers on the Chain which are not designed to be removed from the water each year. (The EA identifies zero.) There are 173 mobile piers on the Chain which can be removed from the water each year. (The EA identifies zero.) There are 65 dry boathouses on the Chain above the OHWM. There are 126 wet boathouses on the Chain below the OHWM. (The EA identifies 78.) There are 349 concrete seawalls, 379 stone/riprap seawalls, and 64 wood seawalls on the Chain. (The EA identifies zero.) Approximately 790 of the 1,226 parcels on the Chain (65%) have some form of shore protection. In addition to ERP's shoreline structure survey, the Defense Fund surveyed all the property owners on the Chain to determine the value of the shoreline structures noted above. Represent 75,316 feet of frontage, or nearly 1/4 of the total frontage on the Chain. Have invested \$2.2 Million in 460 piers. This equates to \$7,400 per respondent and \$4,782 per pier. Have invested \$2.8 Million in 318 boat lifts and 45 boathouses. Have invested over \$1 Million in nearly 15,000 feet of seawall and nearly 14,000 feet of rock riprap, for a total of over 5.3 miles of hard armoring.

### **Response**

The Department respects the concerns about potential impacts to private structures submitted by lake residents. The potential impact to private structures will be a factor that is considered in order for the Department to make an informed decision. The Department is responsible to make decisions consistent with the legal authorities outlined on page 8 of the EA. To provide additional information to clarify the difference between public water rights and riparian rights, we hereby amend page 8 of the EA to include the following. *"The foundation of Wisconsin water law includes protecting broad public water rights such as navigation, recreation, natural beauty, prevention of pollution, protection of water quality, and protection of shorelands and wetlands. Wisconsin law recognizes that owners of lands bordering lakes and rivers – "riparian" owners – hold rights in the water next to their property. These riparian rights include the use of the shoreline, reasonable use of the water, and a right to access the water. However, the Wisconsin Supreme Court has ruled that when conflicts occur between the rights of riparian owners and public rights, the public's rights are primary and the riparian owner's secondary."*

The findings that there are many structures on the Chain, including boat houses, piers (permanent and mobile), boat lifts, riprap, seawalls, and other structures is described in the analysis on page 46. The numbers described in the EA were based on the best available data from tax assessment records and aerial photos. The analysis also discloses that depending on the choices that landowners make with their individual structures, there could be a cost for replacement or maintenance of shoreline structures if a winter drawdown were reduced or eliminated. The cost to an individual landowner would be difficult to determine because it is based on estimates of impacts from changes to winter drawdown, the condition of existing structures, and individual preferences for design and maintenance. Wet boat houses, permanent piers, boat shelters, and shore protection structures are installed and maintained on other Wisconsin lakes with a small to no winter drawdown. The analysis does conclude that structure costs and the effects of ice action are similar to what is found on other Wisconsin lakes with a small or no winter drawdown.

We appreciate the work done to help provide more information regarding the type and location of structures on the Chain along with estimated monetary values provided by a number of landowners. To reflect this additional data that is now available, we hereby amend the analysis on page 46 and 47 to include the following narrative. *"The Manitowish Chain Defense Fund (MCDF) conducted shoreline surveys to record the number and type of structures on Little Star Lake, Manitowish Lake, Manitowish River, Rest Lake, Spider Lake and Stone Lake. Photos of all the shoreline structures were also submitted to the DNR. A statistical estimate of the number of structures on the un-surveyed areas on the Chain was made using a regression*

*analysis between parcel number and shore structures on the surveyed lakes. The structure information submitted by MCDF is as follows:*

- 1022 stationary piers
- 173 mobile piers
- 65 dry boat houses
- 126 wet boat houses
- 349 concrete shorelines
- 379 stone/riprap shorelines
- 64 wood shorelines

*Based on the photos submitted with the structure data, the different types of structures range from those that are currently in poor condition to those that well-maintained and in good condition. Stationary piers in particular had a large number of structures that appear to be in poor condition or that could be seasonally removed.*

*In addition to the shoreline structure survey, the Defense Fund surveyed all the property owners on the Chain to determine the value of the shoreline structures noted above. The response rate was less than 25%. Based on the survey information, landowners stated that they have invested \$2.2 Million in 460 piers. This equates to \$7,400 per respondent and \$4,782 per pier. The respondents also invested \$2.8 Million in 318 boat lifts and 45 boathouses and over \$1 Million in seawall and rock riprap, for a total of over 5.3 miles of hard armoring. The structure values are based on landowner input and not a formal structural and real estate value assessment so the accuracy of these values are difficult to determine. This information is useful in that it shows that the Manitowish Chain of Lakes, like many Wisconsin lakes, contain many shoreline structures that are subject to a monetary cost to construct and maintain."*

b. Indirect economic impacts & broad economic impact analysis

**Comments**

Rather than quantify and address the property damage that will be caused by the DNR's preferred alternative, the EA makes blithe assumptions that (1) the DNR's preferred alternative will not affect property values because the maximum summer water level would remain the same, and (2) any adverse impacts from ice damage "would be similar to the conditions that occur on the majority of lakes in Wisconsin, including natural lakes and impoundments."

If something has worked, why change something with so many unknowns? If this change takes place and things don't work, it effects people's investment in local business, people using the Chain and total enjoyment of this area.

There were many comments submitted that expressed concern that all property values and associated tax revenue would decrease if a new operating order were issued.

Other comments reflected the concern that any changes would cause low water levels on the Chain of Lakes in the summer that would negatively impact tourism and recreation. The issue commonly raised with these concerns included the related negative impact on the local economy.

The DNR is also silent regarding the contribution rock and sandy shores provide for recreation. These properties are highly sought for these values. Again, the DNR's bland statement on page 75 - that there would be no impact to property values - ignores that reality.

In the DNRs EA there is virtually no serious study as to the potential economic impact on the property owners or the local businesses. If the EA is implemented, however, there is potential for serious economic hardship for the property owners and businesses on the MW Chain. Despite this, we could find only a small

paragraph addressing very general economic aspects of the study and a great number of “assumptions” on which the EA is based. There was nothing we could find in the study which outlined what the DNR’s financial responsibility would be if the EA turns out to be a financial disaster like the last dam adjustment several years ago. In addition, if the DNR implements this plan, will it in essence be imposing a large tax on the local landowners and businesses because they bear the responsibility to protect seawalls, protect riprap, put new removable piers in, build new boathouses, protect home foundations, among other things? There is also the potential cost to local business if the economy slumps or to property owners if they suffer from real estate values declining, etc. But, like the last water management experiment on the MW Chain, the DNR seems to have no financial responsibility for their actions at all in implementing the EA and we don’t understand that.

The EA does not provide an adequate consideration of the potential consequences of the proposed change in management of the water level regime for the Manitowish Waters Chain of Lakes, nor does it provide sufficient scientific analysis to support many of the conclusions reached. The proposed action is a significant and complex issue, and must be evaluated in light of a balanced and critically considered test that weighs both the benefits and negative impacts. The EA under Wisconsin Administrative Code NR 150 is the document that should provide to the public the information used in the balance test and should explain the reasoning for how the issues were balanced. The balance test must weigh the potential benefits to the natural resources with respect to the potential negative impacts to the area residents. The EA does not meet this standard.

Due to the economic impact such a proposal will have on the Town and lowering property values, I think an economic impact study is necessary.

### **Response**

As described in the EA, negative impacts to tourism, recreation, and the local economy are not anticipated since the range of alternatives considered would all reduce the frequency and duration of low water conditions on the Chain. Measureable negative impacts to property values are also not expected but as described in the analysis, the cost to protect and maintain shoreline structures is expected to increase and be similar to what lakeshore owners experience on other similar sized Wisconsin lakes.

Many of the comments above reflect the opinion that the Department should provide a more detailed analysis of economic concerns. As described in the general comments, the Department has substantial authority to regulate environmental pollution and alteration to waterways. However, the standards we can apply in exercising these authorities are defined in various regulatory statute and administrative rules. For many Department regulatory programs, these standards do not include social or economic concerns. While rules guiding the development of environmental analysis documentation require general disclosure of direct social and economic concerns to the extent known or reasonably anticipated, a more formal economic impact analysis is not part of the WEPA process.

## **9. Adequacy of the analysis**

### **a. Timing**

#### **Comment**

When your report came out a great majority of summer residents and visitors are not in the area. It is so important that all owners know of the Department’s direction and impact it will have on their property.

#### **Response**

The environmental analysis was first available for public review in mid-September and not during the winter or early spring months to ensure that local stakeholders had a reasonable opportunity to review and comment

on the EA. Additionally, the EA was available electronically allowing for easy access for those not in the area during the public comment period.

b. Scope of analysis

**Comments**

I do not believe the DNR has gathered sufficient data to reach the conclusions they have on the effects of the proposed changes to the operation of the dam. I do not believe the limited data provides for statistically significant conclusions and, therefore, the conclusions are speculative. Any changes to the operation should be gradual and thoroughly studied before any permanent changes are made.

The extensive studies submitted on the website make it quite difficult to get a grasp of what is actually happening “downstream”.

I write to commend DNR on a thorough and thoughtful EA.

We would like to congratulate the DNR for its thorough look at the issue of the Rest Lake Dam and how it is being used to manipulate the river level.

We have seen firsthand the adverse effects the current operating policy of the dam has had on the environmental health of the river as documented in the EA. The Department of Natural Resources has done an outstanding job of investigating and documenting the effects of the current operation policy of the dam on the Manitowish River.

The effect on fish and wildlife above the dam should be thoroughly studied before considering such changes.

To begin, we are impressed with the thorough and informative environmental review of the current and proposed operating orders for Rest Lake Dam on the Manitowish River. The operation of Rest Lake Dam has been a controversial issue for many years and we acknowledge and appreciate the care the agency took with collecting the necessary data to complete an EA and propose alternatives to address the major concerns with the status quo in a way that balances multiple interests on the river and the Chain of Lakes.

The EA speculates that the DNR's preferred alternative will benefit the environment but does not provide any robust scientific analysis to support that speculation. In most instances, to the extent the EA tries to emphasize the positive effects of the DNR's preferred alternative or minimize its negative effects, the EA lacks sufficient scientific analysis to support the conclusions reached. When so many vital community interests are tied up in the dam, it is beyond poor practice for the DNR to propose sweeping changes to the operating order without having conducted the scientific analyses necessary to determine what the effects of the changes will be.

I appreciate the excellent and thorough job done with this Environmental Assessment (EA). The science and detail are excellent. The DNR is to be commended for this work.

**Response**

A few commenters expressed the opinion that, overall, the EA was either too technical or too general. This is a difficult issue to address given the wide range of interest, knowledge, and understanding for potential reviews of an EA. Some people like and want lots of technical detail while others prefer general summaries in plain text. We are also legally bound under WEPA to provide certain technical details (e.g. the EA has to be an analytical document) as well as an analysis that is written in plain language. In developing the EA, Department staff tried to strike a balance for the target audiences. We tried to provide an explanation of technical terms in the narrative of the text where appropriate. We also referenced and attached more technical details in some attachments for those people who might want this information.

## c. Precedent

**Comment**

Page 78, Part 18: The EA states that the, “*The proposal to write a new operating order for the dam is not expected to influence future decisions or foreclose options that may additionally affect the quality of the environment.*” However, only a few dams are operated to maintain a “Public Interest River Flow” or natural flow regime and almost all of these are dams that have a FERC license for power generation. This project could be used by the WDNR to justify re-opening dam operation orders on other lakes in the state. I do not agree that the proposed action from a legal standpoint will not set a precedent for actions on other lakes.

**Response**

The proposal to issue a new operating order for the Rest Lake Dam is not tied to any proposals to re-open other dam operation orders on other lakes. The Department must review each project on a case-by-case basis according to current water law in Wisconsin. In other words, each individual project must stand on its own merits.

## d. EA vs. EIS

**Comments**

A number of individuals commented that there needs to be an Economic Impact Statement to accurately evaluate the impact current and alternative operations of the Rest Lake dam.

To lower the water level on the Manitowish Chain to the point that navigation between these bodies of water is impossible, and lower the shoreline water level so that families such as ours could not swim, boat, fish and enjoy the wildlife as we know it constitutes a “major action significantly affecting the quality of the human environment” for every land owner on the Manitowish Chain.

The draft EA states that an EIS is not necessary because there will be little economic impact by changing from Option 1 or 2 to Option 3 or 4. This is an egregious overstatement, as there will undoubtedly be significant costs form many land owners, us included, for many years to come on many individual properties. If there is serious movement to go to Option 3 or 4, there absolutely needs to be a full blown EIS that takes into account the full economic impact of such drastic change. This is a very big deal!

The WI DNR has proposed changes to the Rest Lake Operating Orders that will result in water levels changes that will significantly impact property owners, the local economy, and safety. We are not sure whether these changes are worth the ultimate “costs” to this beautiful area.

**Response**

It is a common public view that a particular problem would be solved if only the Department would prepare an Environmental Impact Statement (EIS). These particulate “problems” are usually some type of unwanted project being proposed. In reality, WEPA only provides an informational process through the development of environmental analysis documents. EIS’s and EA’s are designed to provide a full, factual disclosure of anticipated impacts and address alternatives- they don’t stop projects, they don’t approve projects, they don’t modify projects – they inform. WEPA does not mandate particular results or decisions in specific cases but simply exists to ensure that environmental effects of a particular project are identified and evaluated during the planning stages. WEPA does not prohibit unwise decisions, only uninformed ones.

Another public view commonly expressed is that without an EIS the Department’s environmental review is incomplete or inadequate. This perception has resulted in much unproductive debate and litigation. Preparation of an EIS does not give the Department any additional authority. In many regulatory circumstances, an EIS would neither add anything of value to the Department’s review taking place under the substantive environmental laws nor would it result in a different decision.

Lastly, since EA's and EIS's are similar in both content and process, the distinction between these two instruments has become quite blurred over time. There are numerous examples where the Department has prepared comprehensive EA's that in previous years would have had a cover which read EIS. Likewise, there are examples of situations where the Department has prepared EIS's that would in other situations been labeled as an EA. The common sense approach that has been applied in more recent years is to develop an environmental analysis to the level of detail required to fully and adequately address anticipated impacts for a particular proposal, regardless of what we call it. We believe this approach is in keeping with the spirit and intent of WEPA and results in a more efficient, productive, and useful environmental analysis process.

Chapter NR 150, Wisconsin Administrative Code, provides environmental analysis rules and procedures for Department actions to comply with WEPA. NR 150 indicated that an EIS is required on major actions that would significantly affect the quality of the human environment. The meaning of this threshold is clarified by the definition of terms in the code as follows:

- Human environment – “Human environment” means the natural or physical environment and the relationship of people with that environment.
- Major action - “Major action” means an action of such magnitude and complexity that the action will have significant effects upon the quality of the human environment. It does not include actions whose significance is based only on economic or social effects.
- Significant effects – “Significant effects” means considerable and important impacts of major actions on the quality of the human environment.

Over time these terms have been further clarified through the courts, our own experiences, and guidelines provided by CEQ (President's Council on Environmental Quality guides and directs interpretation and application of the National Environmental Policy Act which WEPA was patterned after). The terms used to define “major action” have been interpreted as follows:

- Magnitude – the *extent* to which the action will cover various conditions -> What is the scope of the project and anticipated effects (i.e. the range within an action will display or manifest itself)?
- Complexity – the complexity is a matter of *degree* (relative) - Is the project inherently complex? Is the project made up of so many different, interrelated parts or elements that it requires study or expert knowledge to deal with it before an action can be finalized (i.e. permit decisions)?
- Notable or serious – must only satisfy one or the other, not both -> Will the action attract attention to something of quality or significance? Is there anything about the action (eg. special features) that makes it worth remembering? If so, how much and are the attracting features worth pursuing in greater detail? Will the action require concern for management, policy, or ecological issues of consequence?

The key in making determinations on the need for an EIS rests with determining if significant effects (either beneficial or adverse) could result from a particular project proposal. As with defining what constitutes a “major action”, terms used to define “significant effects” have likewise been interpreted over time as follows:

- Considerable - considerable impacts are those that are large in number and cover a broad range of resources (i.e. *breadth*) and the effects are evident to some degree on a scale of non-little-some-major-irreversible (i.e. *depth*).
- Important – determination of importance required a judgment by which you ascribe *superior value or influence* to a particular effect (ultimately in total).
- Long-term – effects are considered long-term if they are expected to persist for more than one generation (i.e. 20-25 years).
- Significance varies with the setting of a proposed action

- Determination of significance requires a consideration of both context and intensity. Context means that the significance of an action must be analyzed in several contexts – society as a whole, the affected region, the affected interests locally. Intensity refers to the severity of the anticipated impact. Evaluation of intensity of various impacts requires a consideration of the primary and secondary effects relative to whether they are long-term versus short-term, the effects on geographically scarce resources, cumulative effects, uncertain or unknown risks, precedent for future actions, and controversy over any environmental effects, particularly those that affect public health and safety (these questions are required to be addressed in the section on significance in our environmental analysis).

Many individuals commenting on the EA stated that they believed the proposed project would cause certain significant effects. From a particular individual's perspective, certain potential impacts may be viewed as significant. We do not deny that something may be significant to someone, particularly when it affects them directly and personally. However, for the purposes of WEPA we must consider significance in a broader perspective as defined above. There are many project proposals that will result in environmental effects for which the Department provides approval. WEPA simply requires that we identify those potential effects and determine which ones, if any, are likely to be significant. The proposed issuance of a new operating order would result in certain environmental impacts as disclosed in the environmental analysis presented. However, based on the EA and the subsequent amendments herein, we do not believe any of the anticipated environmental effects would be considered significant. Therefore, we conclude that an EIS is not necessary.

## **10. Future permitting process**

### **Comment**

What is the process moving forward if the operating order is to be changed? Will there be a comment period or a public hearing on the exacting operating order that is implemented?

### **Response**

The Department plans to hold a public meeting on the draft operating order in the summer of 2013 to seek public input prior to finalizing an operating order for the Rest Lake Dam. Current updates can be found on the DNR website at: <http://dnr.wi.gov/water/basin/upwis/restlakedam/>

-Dated May 10<sup>th</sup>, 2013-